A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION AND MANAGEMENT OF VARICOSE VEINS AMONG NURSES WORKING IN CRITICAL CARE UNIT AT PSG HOSPITALS IN COIMBATORE

By

SHANGEETHA.D

A dissertation submitted to **The Tamil Nadu Dr. M G R Medical University,** Chennai, in partial fulfillment of requirement of the degree of

Master of Science in Nursing

Branch I Medical Surgical Nursing

2016

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Proposal presentation on: 29.01.2015

Approved by Dissertation Committee on: 30.06.16

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Certified that **"A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION AND MANAGEMENT OF VARICOSE VEINS AMONG NURSES WORKING IN CRITICAL CARE UNIT AT PSG HOSPITALS IN COIMBATORE** is the bonafide work of **D.SHANGEETHA,** PSG College of Nursing, Coimbatore, submitted in partial fulfillment of requirement for the degree of Master of Sciences in Nursing to **The Tamil Nadu Dr. M G R Medical University, Chennai.**

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ACKNOWLEDGEMENT

My wholehearted praises to **God Almighty** for his enriched blessings and abundant grace and mercy which encircled me through every step of this work to convert this work into reality.

I wish to thank the following individuals for help rendered in various aspects of this study.

I thankfully acknowledge the **Managing Trustee**, for having given me the opportunity to utilize the facilities at the institution.

I honesty express my gratitude to the express former Principal, **Dr. Elizabeth Jean Abraham M.Sc. (N), Ph.D.,** PSG College of Nursing, for her kind co-operation and support.

My profound gratitude to my research guide **Dr. G. Malarvizhi, M.Sc. (N)., Ph.D.,** Principal i/c, HOD of Child Health Nursing Department**,** PSG College of Nursing ,who incessantly inspired and helped me to compile the study. Her outstanding and ongoing contributions were significant in my study.

With deep sense of gratitude, I thank my subject guide **Mrs. LEENA. J, M.Sc (N),** Associate Professor, PSG College of Nursing, for her profound interest and guidance in every aspect of my study. Her comprehensive knowledge and readiness to help are remarkable.

My sincere thanks to **Dr. A. Tamilselvi, M.Sc (N)**, **Ph.D., Head** of Medical Surgical Nursing Department, for her keen interest, constant encouragement and enduring support throughout the study.

I have immense pleasure in thanking **Dr.Vimal Kumar Govindhan,** former Medical Director and **Mrs. Malliga,** Nursing superintendent, PSG Hospitals, who extended full co-operation in my study.

I would like to acknowledge the **Faculty members of Medical Surgical Nursing Department, PSG College of Nursing** for their valuable suggestions and support.

I extend my gratitude towards **Mr. Subramaniam,** statistician for this valuable corrections and kindness which helped me in doing my data analysis.

I express my sincere thanks to the **Ethical Committee** of PSG institution for granting permission to conduct the study.

I wish to convey grateful thanks to **Critical Care Unit Nurses and Nursing Supervisors**, without their co-operation and active participation, this work would not have been materialized.

I extend my whole-hearted thanks to **Library staff members** for rendering all the facilities and their kind approach during the time of study.

I am desirous of placing on record **my Husband, Mother, Father and sisters** who realized my commitment and supported me through their fervent prayers, wishes and encouragement, which I consider so precious.

An expression of deep love and warm thanks doesn't seem to be sufficient for my son, **Akhilan. N,** who evinced long patience, tolerated stress and strain due to his mother's preoccupation with this study, was exemplary.

My sincere thanks and appreciation to **Mr. Mohan Kumar,** Cool Blue Dot Net Browsing Centre, for his excellent and untiring patience in the computer layout of this manuscript.

I continue to be indebted to all, for their prayers, support, and care extended to me directly and indirectly for successfully completing my study.

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LIST OF ABBREVIATIONS

Sl. No	Abbreviations	
1	WHO	World Health Organization
2	ICU	Intensive care unit
3	VTP	Video assisted Teaching Programme
4	CI	Confidential Interval
5	SD	Standard Deviation
6	f	Frequency
7	S	Significant
8	NS	Not Significant
9	MICU	Medical intensive care unit
10	KTU	Kidney transplant unit
11	IMCU	Intermediate medical care unit
12	ICCU	Intensive coronary care unit
13	CTICU	Cardio thoracic intensive care unit
14	POW	Post operative ward
15	BICU	Burns intensive care unit
16	ANOVA	Analysis of Variance
17	OR	Ordinal Logistic Regression

ABSTRACT

A study to assess the effectiveness of video assisted teaching programme on knowledge regarding prevention and management of varicose veins among nurses working in critical care unit at PSG Hospitals in Coimbatore.

Nurses are an integral component of health care delivery system. In discharging the duties, nurses encounter a variety of occupational health problems, which may be categorized in to biological hazards, physical hazards and psychological hazards.

Objectives: Assess the knowledge on prevention and management of varicose veins among critical care unit Nurses. Evaluate the effectiveness of video assisted teaching programme on knowledge regarding prevention and management of varicose Veins. Determine the association between knowledge scores of critical care unit nurses on prevention and management of varicose veins with selected demographic variables.

Research Methodology: The study was conducted in PSG Hospitals, Coimbatore and the research method adopted was Pre experimental one group Pre-test and Post-test design. As per the inclusion criteria, 50 samples were selected. The pre-test score of knowledge was assessed by a self structured questionnaire. A video assisted teaching program on prevention and management of varicose veins (duration of 30-45 minutes) was given and the post-test assessment was done on the 7^{th} day by using the same tool.

Results: The study finding revealed an increase in the knowledge level following the video assisted teaching program. In this study, the statistical analysis showed that

there was a significant improvement($t = 29.25$, $p < 0.05$), in the level of knowledge after implementation of video assisted teaching programme and significant association ($\chi^2 = 5.091$, $p < 0.05$) between pre test score of knowledge on prevention and management of varicose veins with age, professional education and years of experience.

Conclusion: Video assisted teaching program was helpful in improving knowledge among nurses regarding prevention and management of varicose veins.

Key words:

Effectiveness, video assisted teaching program, varicose veins.

CHAPTER I

INTRODUCTION

"Veins are **V**ery **E**ssential **I**ngredient for **N**ursing **S**taff"

1.1 Background of the study:

Nurses are an integral component of health care delivery system. In discharging the duties, nurses encounter a variety of occupational health problems, which may be categorized in to biological hazards, physical hazards and psychological hazards. Nurses constitute the largest category of health care workers in most of the countries, and have a critical role in the health care delivery system. Nurses generally serve as the primary interface with patients. It would be fair to state that the health care delivery system would cease to function in the absence of nurses (**Rawlance Ndejjo, 2015**).

Diseases are more common in the world; the person will find out the cause of diseases and try to take immediate action to prevent the diseases. Immediate awareness is the best way to save the life successfully. Varicose veins are one of the chief preventable diseases which are associated with veins. It is a serious disease, which poses threat to life of patient when effective and efficient measures are not taken.

Varicose veins are common in the superficial veins of the legs which are subject to high pressure when standing. Accumulation of more and more venous blood in the superficial venous system makes the superficial veins dilated and tortuous. This condition of dilated and tortuous veins in the leg due to damaged value between the deep and superficial venous system is called varicose veins (**Lewis, 2010**).

Excess weight, heavy lifting, and pregnancy also increase the likelihood of developing varicose veins as it increases pressure on the body. Increasing age, menopause, genetic weaknesses in the walls of the vein or in their valves, excessive pressure within the veins due to a low fiber diet which causes an increase in straining during bowel movements, and damage to the veins or to their valves resulting from inflammation also increase the risk of developing varicose veins. Varicose veins may or may not be accompanied by symptoms such as fatigue,

aching discomfort, feelings of heaviness or pain in the legs, fluid retention, swelling and pain in the feet and ankles, and discoloration. These dilated and often painful veins affect 50% of middle-aged adults and are twice as common in women as in men. Non-surgical treatments include sclerotherapy, elastic stockings, elevating the legs, and exercise. The traditional surgical treatment has been vein stripping to remove the affected veins. Alternative techniques, such as ultrasound-guided foam sclerotherapy, radiofrequency ablation and endovenous laser treatment, are available as well. Because most of the blood in the legs is returned by the deep veins, the superficial veins, which return only about 10 per cent of the total blood of the legs, can usually be removed or ablated without serious harm. (**Brunner, 2014**)

The work environment constitutes an important part of man's total environment, so health to a large extent is affected by work conditions. Occupational environment too plays a major role on the health of the exposed. The health hazards get more severe when the duration of exposure increases. Varicose veins is the most common disease in women and in people whose occupations require prolonged standing, pregnancy, nurses, teachers, traffic police, security, bus conductors, machine workers, pregnancy and construction workers etc (**Neill R, 2005**).

The deep and superficial veins get damaged because of prolonged standing. Once the vein is damaged there is a reversal of blood flow from deep to superficial vein. It is generally believed that occupations involving prolonged standing and walking rise venous pressure in the legs for a long period of time and aggravates any inherent tendency to varicose. An analysis of occupation in varicose veins patients has shown that the incidence was greater (67 %) in people whose occupations involved prolonged standing and walking. (**DM Satapathy, 2009).**

Varicose veins are one of the most common conditions of venous disease in the legs. According to the American Society for Vascular Surgery, as many as 40 million Americans have varicose veins. Statistics further show that 15% of men and 25% of women have varicose veins. In fact, more people lose work time from vein disorders than from arterial disease (**Newsletter, Spring 2005).**

As per the census of WHO (2007), 2% of the western population have varicose vein, women have 3-4 times more than men. Varicose veins are least found in Eastern population. Statistics as per the country for prevalence of varicose veins is 45 per 1000. It was found

approximately one in 22 for U S A. In India the varicose vein show an effect on one out of 2 people aged 50 years (**Benjamin W Van Voorhees, 2007**).

1.2 Need for the study:

Varicose veins are the veins that have become enlarged and tortuous. Veins have leaflet valves to prevent blood from flowing backwards. Leg muscles pump the veins to return blood to the heart, against the effects of gravity. When veins become varicose, the leaflets of the valves no longer meet properly, and the valves do not work. This allows blood to flow backwards and they enlarge even more. Varicose veins are most common in the superficial veins of the legs, which are subject to high pressure when standing. Besides cosmetic problem, varicose veins are can be painful, especially when standing or walking.

Millions of workers spend majority of the working day on their feet and many hours in static positions. Standing uses 20% more energy than sitting and because human bodies are not designed to stand at work, prolonged standing, can lead to tiredness, loss of concentration and increased health risks. These risks include the swelling of feet and legs, feet and joint damage, varicose veins, heart and circulatory disorders, lower back problems and pregnancy complications (**Venisha Pearl Tauro, 2015**).

A study result shown that, 40 years old had a prevalence of varicose veins was 22%, 50 years old had a prevalence of varicose veins 35%, and 60 years old had a prevalence of varicose veins 41% respectively (**Laurikka JO, 2002**). A genetic link exists, and the risk of varicose veins developing if both parents are affected is 90%; 62% risk if one parent is affected and female off spring; 25% risk if one parent is affected and male offspring; and if no parent is affected, the risk is 20% **(Shiksha Sharma, 2013**).

Varicose vein commonly occurs in the general population. The physical conditions during the work and conditions of employment are important risk factors that induced prevalence of varicose veins are increased. For instance prolong standing posture and physical state is irreversible in the nursing profession. A cross-sectional study was carried out among 203 nurses from three general hospitals in Amol, Iran to determine the varicose veins in nurses. The result shows prevalence of varicose vein was 73.9% (**Sayyed Hamid Sharifnia, 2010**).

The nursing professionals are forced to stand for a long time for providing client care especially when they are posted in Intensive care Unit. When the procedure is of long duration they must stand till completion of procedure and aftercare to the patient. Lack of rest and exercise for the calf muscles may lead to decrease in tone of those "second heart of the body". This which in turn leads to the leaflet valves incompetence which then causing the varicose veins in staff nurses. A lot more factors cause nurses especially female staff nurses, prone to varicose veins.

The major risk factors of varicose veins are age, gender, obesity, pregnancy, family history and prolonged standing. Among these risk factors, nurses have the two important risk factors, which are gender and prolonged standing. Women have a greater risk of developing varicose veins as compared to men. Nurses are at even higher risk of developing varicose veins because of their nature of job. Nurses require standing on patient's side almost all the time and this increases their risk of getting varicose veins later in their life.

With regard to Gender, majority of the nurses both internationally and in India are female. In UK, Male female ratio among nurses is 1:10. In Canada it is 1:19. In India it is around 1:6 and in case of nursing students in India, the ratio is slightly equaled 1:3. When considering the age, with advanced age, the risk of getting varicose veins is increased and the male female ratio among aged nurses is 1 in 100. The above said statistical values when combined with other demographic factors, it is evidenced that aged nurses are at high risk of developing varicose veins (**Beebe Dimmer JL, 2005).**

According to one estimate in 2004, 15-20% of population in India is suffering from varicose vein disease. In our country people are quite ignorant of this disease. So the severity of disease becomes increased. Health education is one of the strategies in the prevention of varicose veins. Keeping the preventive facts in view and the fact that health education has a significant effect on knowledge of traffic police which in turn helps in the prevention of varicose veins (**V. K. Shukla, 2005).**

Current statistics reveal that nearly 2.7 million people worldwide (2011), suffer from varicosities and the toll is ever increasing. Where India is concerned, experts are witnessing a

growing prevalence of varicosities especially among women. Nearly, 20-15 per cent of women and 10-15 per cent of men suffer from varicose veins in India **(Express Health care, 2011**).

The duties and responsibilities of nurses are different in different area of practice. The burden and job related physical stress also varies with different area of practice. For instance, ICU nurses have more job related stress than those working in a ward. ICU nurses seldom get chances of rest and recreation during their duty hours as compared with ward nurses who gets more time for relaxation. In this context, a comparison between different areas of practice becomes a necessity.

Though there is a high prevalence of varicose veins in India, very few studies have been conducted in India. Nurses are under the risk of development of varicose veins since they are forced to stand for long time for giving care. Lack of rest and exercise for calf muscles may lead to varicose veins. Researcher found the importance of doing this study based on the literature, statistical values and also based on her personal experience she had while she was doing her clinical practice as a staff nurse.

From the above studies and statistics it is clear that varicose veins are increasing worldwide. Since the nurses especially the ICU nurses spend most of the time standing they are prone to get lower limb symptoms like itchiness, cramps and burning sensation and pain especially when standing. They result in superficial swollen veins, which later develop to varicose veins. So there is a need to educate the ICU nurses regarding this condition in order to prevent it.

1.3 Statement of the problem:

A study to assess the effectiveness of video assisted teaching programme on knowledge regarding prevention and management of varicose veins among nurses working in critical care unit at PSG Hospitals in Coimbatore.

1.4 Objectives of the study:

1. Assess the knowledge on prevention and management of varicose veins among critical care unit Nurses.

2. Evaluate the effectiveness of video assisted teaching programme on knowledge regarding prevention and management of varicose Veins.
3. Determine the association between knowledge scores of critical care unit nurses on prevention and management of varicose veins with selected demographic variables.

1.5 Assumptions of the study:

1. Nurses working in ICU have more risk of developing varicose veins.
2. Education about prevention and management of varicose veins has increased the knowledge and practice of nurses to reduce their occurrence as well as prevent the complications of varicose veins.

1.6 Hypothesis:

H1: There will be a significant difference on mean post test and mean pre test level of knowledge on prevention and management of varicose veins, among critical care nurses.

H2: There will be significant association between the knowledge of prevention and management of varicose veins and their selected demographic variables of the respondents.

1.7 Delimitation:

- The study population was delimited to the nurses who are working in critical care unit.

1.8 Operational Definitions:

Assess: To estimate or determine the significance, importance or value of video assisted teaching programme regarding prevention and management of varicose vein among nurses before and after the implementation of video assisted teaching program.

Effectiveness: It refers to the extent to which the video assisted teaching Programme on prevention and management of varicose veins has achieved the desired effect as gain in knowledge scores by ICU Nurses.

Video assisted teaching programme (VTP): : In this study video-assisted teaching refers to a systematically prepared teaching material used for imparting knowledge regarding ICU nurses about prevention and management of varicose veins.

Prevention: It refers to hindering the fact from happening, by following preventive measures one can able to avoid the occurrence of disease. Avoiding standing and sitting for prolonged time, elevation of foot after prolonged standing and sitting, leg exercise, swimming, maintaining appropriate body weight, elevating the legs periodically, wearing compression stockings and clothing choices and walking these will help to prevent the occurrence of varicose vein.

Management: Management includes leg exercises, elevation of foot after prolonged standing and sitting, sclerotherapy, thermal ablation, elastic compression, and radio frequency.

Varicose veins: In this study it refers to dilated and twisted condition of the veins (usually those of legs) caused by structural changes in the walls or valves of the vessels.

Critical Care Unit Nurses: A registered nurse working in the department of general or specialized ICU of the PSG hospital for the minimum period of one year.

1.9 Projected Outcome:

Video assisted teaching program could help to improve the knowledge of the nurses on prevention and management of varicose veins.

1.10 Conceptual frame work:

The conceptual framework for this study was derived from general system model (**Ludwig Von Bertalanffy, 1968**). It is regarded as a universal grand theory because of its unique relevancy and applicability. It is composed of both structural and functional components that interact within a boundary that filters the type and rate of exchange with the environment. Living system terms are open because there is an ongoing exchange of matter, energy, and information. Through the process of selecting the system which regulates the type and the amount of input through self-regulation to maintain the system equilibrium or homeostasis. Some types of input are used immediately in their original state where as the other complex transformations are

continuously processed through the system and released as output. The following components in the modified general system model are as follows:

Input: Input is the information needed by the system. It is a matter, energy and information received from the environment. In this study, input is considered as the assessment of knowledge of staff nurses and administration of video assisted teaching program. It includes demographic variables and knowledge was evaluated based upon pre-test structured questionnaires regarding prevention and management of varicose veins.

Through put: Through put is the activity phase. It is a matter, energy and information that is modified or transformed within the system. It is the process by which the system processes the input and releases an output. It is a process that allows input to change. It includes the provision of a video assisted teaching program with the help of computer aided tools for the nurses who are working in critical care unit.

Output: It is an energy, matter and information that leave a system into the environment. In the present study it is the change in knowledge that is obtained by video assisted teaching program on prevention and management of varicose veins. The information are continuously processed through the system and released as output in an altered state. It includes evaluation of the nurse's knowledge on prevention and management of varicose veins with the same structured questionnaire to bring changes in the level of knowledge of the nurses.

Feedback: It is the response of the environment to the system. Feedback may be positive or negative or neutral. It is necessary to strengthen the input and throughput and modify them as desired when the results show any inadequate knowledge of nurses on prevention and management of varicose veins.

CHAPTER-II

REVIEW OF LITERATURE

A literature review is a description and analysis of the literature relevant to a particular field or topic. It gives an overview of what has been said, who the key writers are, what are the prevailing theories and hypotheses, what questions are being asked and what methodologies are appropriate and useful.

Review of literature is the writings of recognized authorities and of previous research which provides the evidence that the researcher is familiar with what is already known and what is still unknown. Citing studies that show substantial agreement and those that seem to prevent conflicting conclusions helps to sharpen and define understanding of the existing knowledge in the problem area, provides background for the research project and makes the reader aware of the status of the issue.

This chapter consists of literature and research studies related to:

2.1 Literature related to the risk factors and prevention of varicose vein

2.2 Literature related to knowledge on prevention and management of varicose veins

2.3 Literature related to effectiveness of video assisted teaching programme.

2.1 Literature related to the risk factors and prevalence of varicose vein.

A Cross sectional study was done in order to determine the relationship between occupational and demographic hazards that characterize varicose veins in the legs and their intensity among 203 nurses in three general hospitals in Amol, Iran. Self filled Questionnaire was used to collect the required information. It was completed through interview and physical examination based on the standard CEAP (C-Clinical, E-Etiologic, A-Anatomic, P-Pathophysiologic) forms. 145 of the subjects were female. 73.9% of the nurses had varicose with different levels (CI 95%: 77- 65). Female gender, age, body mass index, regular exercise, family history, weight, and overtime between job factors, years of service, standing and sitting in the ward had significant relationship with the varicose intensity. The result of the study shows that the necessary training to reduce disability and treatment expenses to adjust risk factors and

prevention of inducing varicose is essential according to the high number of the nurses who have lower varicose veins with different intensities and the effect of lots of demographic and occupational factors **(Sharif Ni aH et al., 2015).**

A cross sectional study was done among 150 security guards working in Udupi district. Interview method was used to identify the risk factors of varicose veins. The result shows 5.3% had family history of varicose veins, 56.7% maintaining standing position during their work, not doing exercises daily 65.3%, no habit of using the stockings 87.3%, no habit of elevating the legs while sleeping 95.3% (**Kakani Renitha, 2015).**

A cross sectional study conducted to identify the occupational and demographic risk factors of lower limb varicose vein which could be interventional in improving working atmosphere and quality of life for their long term nursing career among 364 nurses working at GMCH and Associated Hospitals in Udaipur, Rajasthan. The nurses having lower limb varicose veins were subject to clinical examination by the experts for confirmation of the diagnosis. The results revealed that the female nurses had slightly higher prevalence compared with their male counterpart (24.50% V/S 22.58%). The occupational risk factors responsible for lower limb varicose veins among nurses were longer work history (40.42% P- 0.001) longer working hours (>8 hrs 38.70%, p- <0.001) and prolonged orthostatic (standing longer – 57.14%) beside patients bed. They are older in age (28.30%, p- 0.001) and also having a family history of varicose veins (38.70%, p- 0.006) (**Neeta Mishra et al,. 2015**)

A Cross Sectional Study was conducted to determine the prevalence and associated risk factors of varicose veins among 197 female hairdressers in Shahroud, north of Iran in 2012. Data were collected by demographic information form .The result showed that Prevalence of varicose veins was 47.7%. Varicose veins were significantly associated with age (OR=1.08; 95% CI: 1.03, 1.13); family history of varicose disease (OR=1.99; 95% CI: 1.03, 3.82) and duration of standing (OR=2.34; 95% CI: 1.05, 5.22) and it was associated with increasing age, family history of varicose disease, and prolonged standing. **(Hossein Ebrahimi et al,. 2015)**

Varicose veins are visible surface manifestations of an underlying venous insufficiency syndrome. The present study was designed to investigate the various risks factors behind the occurrence of varicose veins. One hundred fifty five patients of varicose veins were analyzed for various factors. A specialized questionnaire was developed to record detailed information of varicose veins patients. Two way- ANOVA, odds ratio and chi square test were used to compare the data. The study result showed that the frequency of varicose veins patients was significantly higher in the age group of 21 to 30 years. Standing occupation was highly significant as compared to sitting position. Two way ANOVA revealed statistically significant values for age group (CI= 95 %,) whereas sex alone as a factor was found less significant CI= 95%,. Significant association was found between working posture and sex ratio ($p< 0.05$). Working posture and age groups were found to be the most significant risk factors of varicose veins (**Shiksha sharma et al,. 2013**)

A study was conducted on "Relationship between prolonged standing and symptoms of varicose veins and nocturnal leg cramps among 2165 workers from various occupations. The source of data from a department of occupational and environmental health, the graduate school of public health, Seoul National University, Seoul , Korea. Multiple logistic regression analyses were conducted to reveal factors related to symptoms of varicose veins and nocturnal leg cramps. The prevalence of varicose veins and nocturnal leg cramps was higher among women than men. Prolonged standing at work may be a more important risk factor for varicose veins and nocturnal leg cramps than biological differences between women and men. Therefore, effective interventions to interrupt or reduce prolonged standing at work should be implemented for the prevention of varicose veins and nocturnal leg cramps **(Bahk JW et al,. 2012).**

A study was done regarding clinical features and management of varicose veins of lower limbs at a tertiary Medical College Hospital and District Hospital in Southern India. Over a two year period all admitted patients to a government tertiary level district hospital of varicose veins were evaluated for demographics, clinical manifestations, treatment and outcome. This study reveals that the disease is more prevalent during the active adult life in their 3rd and 4th decades and males were more affected. The occupations needing prolonged standing and use of violent muscular efforts was found to be a contributing or precipitating factor for varicose veins. Hereditary factors may play an important role in the development of varicose veins. 25% of

patients had a family history of varicose veins occurring in close relatives. Majority of patients presented to the hospital for complications of the disease (60%) rather than for cosmetic purposes. The commonest symptoms in the study were prominent swellings in the lower limb and pain. Majority of the patients had combined valvular incompetence (71%). The most common post-operative complication observed was wound infection (25%) **(Pramod Mirji 2011).**

A prospective study was conducted to identify the relation between prolonged standing at work and hospitalization due to varicose veins in Denmark. A representative random sample of 9653 working age adults was drawn from the central population register of Denmark who was 20-59 years old and employed. The results revealed that the employees with jobs that require prolonged standing or walking compared to all other employees, the relative risk was 1.75(95% CI 0.92 to 3.34) for men and 1.82(95% CI 1.12 to 2.95) for women the pooled estimate of relative risk was 1.78(95% CI 1.19 to 2.68).The etiological fraction of prolonged standing or walking at work was estimated as 22.5% for men and 22.6% for women. The study confirms that prolonged standing at work constitutes and excess risk of hospital treatment due to varicose veins and accounts for more than one fifth of all cases of working age **(Tuchsen F 2011).**

A retrospective cohort design study conducted among 58 patients who were diagnosed with varicose veins in Bapuji hospital and CG hospital, Davangere during January 2009 to April 2010 to identify the incidence of varicose veins in relation to occupation and working hours. The study result shown that 70.69% cases involved in mainly standing occupations while only 29.31% patients belonged to mainly sitting occupations. The male female ratio among the varicose vein patients was found to be 4:1 veins and standing occupations, and taking care of the factors responsible for the disease will go a long way in increasing the productivity and efficiency of workers. People who work more than one year an average, the patients who got the disease had worked standing or walking for 9.33 hours/day. The maximum incidence was seen in the age group of 30-39 years with as many as 17 cases out of 58 cases studied. The study concluded that a definite co relation between varicose 9.33 hours per day standing or walking more likely to develop the disease *(***Amir Mohammad 2011).**

A cross sectional study was conducted among teachers in 12 schools in Ahmadabad which revealed that 77% of the 138 teachers suffered from varicosity or enlargement of the veins of legs. Among these 107 nearly 84 people suffered from spider webs, the first stage of varicose veins. While 23 had severely established varicose veins which means they suffered from severe aches, swelling and heaviness in the legs. This study concluded that varicose veins is a condition that makes walking and standing extremely difficult and painful and if treated early at the stage of spider veins they are preventable **(Sharma R.,2010).**

A cross-sectional multicenter study was done among 476 nursing staff in the wards and special services of five Calatan Public Hospitals working for at least 6 consecutive months on day shift or night shift in Spain. The nurses completed a validated, self administered questionnaire on quality of life and other questionnaire on health related aspects such as sleep working condition and demographic variables. The study showed that nurses working on the night shift showed higher prevalence of varicose veins(46.6% v/s 36.4%; p=0.008), sleeping disorders were also more frequent on night shift including insomnia and sleep fragmentation with no differences in those who slept during the day(22.3% v/s 33.7%) or night (17.6% v/s 30%) with respect to day shift (12.2% v/s 22.6%).The study concluded that night shift is associated with a higher incidence of varicose veins, as well as physical and physiological well-being **(Bonet- Porqueras R et al,. 2009).**

A cross sectional study was done to assess the prevalence of varicose veins, risk factors and the complications of varicose veins among school teachers. Samples of 100 teachers were taken in Thiruvananthapuram. The study showed the prevalence of varicose veins was 19% among the school teachers. Among those affected with varicose veins, 89.5% had history of standing for long duration. Ratio of 26.3% had complications from this disease. Thus conclusion was made that standing for long hours was a major risk factor as compared to other known risk factors. Hence it is very much essential to prevent the occurrence of these risk factors **(Jacob DA, 2008).**

2.2 Literature related to knowledge on prevention and management of varicose veins

A descriptive survey approach with non-experimental descriptive survey design was used to assess the knowledge regarding risk factors and preventive measures of varicose veins among staff nurses of selected Hospitals at Mangaluru for the study. Non-probability purposive sampling technique was used to select samples (n=100). The data collection tool consisted of demographic data and knowledge questionnaire. Many of the subjects (61%) were having good knowledge regarding varicose vein, followed by 26% having average knowledge, and 10% were having very good knowledge. The mean percentage of overall level of knowledge was 59.64%. Analysis of the association between the level of knowledge and selected demographic variables exposed that there was significant association between the level of knowledge and marital status, academic qualification, years of experience in the present ward and source of Knowledge (**Venisha Pearl Tauro et al,. 2015) .**

A pre-experimental research design study was conducted to evaluate the effectiveness of self instructional module on prevention of varicose veins among traffic police personnel in a selected police station at Mangalore. One group pre test post test design was used in this study. Further effectiveness of self instructional module was tested by inferential statistics using paired 't' test ('t'=24.93 P<0.0001) on the whole, the study showed that the self instructional module was very effective in increasing the knowledge of traffic police personnel on prevention of varicose veins **(Kapil Sharma 2013).**

A survey design study was conducted to assess the prevalence and preventive practices of health problems and hazards among forty five neuro nurses in Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. The results showed that among 45 nurses six (13.32%) were having varicose veins. Majority of nurses having varicose vein were practicing foot end elevation while lying down/sitting as a therapeutic measure (66.67%). One third of them were using elastic stockings along with the practice of foot end elevation. Majority of nurses (40%) were keeping their legs elevated while resting, as well as avoiding prolonged standing and sitting (31.11%) in order to prevent varicose veins **(Sreekala. K. K, 2010**).

A descriptive study was conducted in Christian Medical College, Vellore to assess the prevalence of selected work-related health problems among 500 nursing personnel. The instruments used were Modified Cornell Musculoskeletal discomfort questionnaire to assess and score the musculoskeletal discomfort and CEAP (C-Clinical, E-Etiologic,

A-Anatomic, P- Pathophysiologic) classification to assess the presence and grade the varicose veins. The results showed that 84.4 percent of the participants had musculoskeletal discomfort and 29.6 percent of the participants had varicose veins. Findings of the study demonstrated that there is a need to increase the awareness among nurses regarding the problems and to follow specific strategies to prevent work-related health problems (**Umesh SR, et al,. 2014).**

2.3 Literature related to effectiveness of video assisted teaching programme.

A pre-experimental research design with one group pre-test and post-test design study was conducted to assess the effectiveness of video assisted teaching program regarding management of selected obstetric emergencies among sixty III year BSc nursing students in selected colleges at Tamil Nadu. Questionnaire is prepared on basic concepts about obstetric emergencies, hemorrhage and shock, cord prolapse and uterine rupture. The overall pre-test knowledge score regarding management of selected obstetrical emergencies among nursing students was 36.38 with a standard deviation of 5.52. The overall post test score regarding management of selected obstetrical emergencies among nursing students was 87.16 with a standard deviation of 3.81 which depict the effectiveness of video teaching. There is a significant association between pretest knowledge score on management of selected obstetrical emergencies among nursing students with selected demographic variable such as gender, place of residence, birth order & source of information (**Pushpamala Ramaiah, et al,. 2015).**

A true experimental, pre-test post-test one group design study was conducted to evaluate the effectiveness of video assisted teaching programme on knowledge regarding screening of mental illness among thirty staff nurses working in selected hospitals of Vadodara. Self structured questionnaire were used to assess the knowledge regarding screening of mental illness. Findings revealed that in pre-test staff nurses having on average 19.75% knowledge regarding screening of mental illness 14.47±2.99 and in post-test, average 55.32 % knowledge regarding screening of mental illness and mean score was 22.13±3.44.T calculated value is -

8.483 which are more than the tabulated value of 2.75at 0.05 level of significance and conclude that there is significant difference between pre-test and post- test knowledge score of staff nurses **(Arpita G, 2015).**

A Pre Experimental Design study was conducted to assess the effectiveness of video assisted teaching program on knowledge of nurses regarding non pharmacological pain relieving intervention for children in selected hospital, Pune. A structured questionnaire was used to assess the knowledge of the staff nurse regarding non pharmacological pain relieving interventions for children. In the pre-test more than half (53.3%) of the staff nurses had average knowledge, 40% of them had poor knowledge and 6.7% had good knowledge regarding non-pharmacological pain relieving interventions before the video assisted teaching program, but in the post test there was significant improvement in the knowledge scores 80 % of nurses had good knowledge. Average knowledge score in pretest was 9.3 which increased to 15.5 in posttest. Hence the video assisted teaching regarding non pharmacological pain relieving interventions for children was effective in rendering knowledge and bringing awareness **(Sreelekha Rajesh et al,. 2014).**

One group pre test post test design study was done to evaluate the effectiveness of video assisted teaching program regarding biomedical waste management and to determine the association of knowledge among 60 staff nurses working in Krishna Hospital and Medical Research Centre, Karad. Pre test was conducted before administration of video assisted teaching program and post test was conducted after 7 days. It was observed that after administering the video assisted teaching program the mean of total knowledge score was increased to 26.033 from 17.383 that of pre test knowledge mean score. The paired 't' (t-12.947 , p <0.0001) which was consider to be extremely significant, indicates significant improvement in knowledge of staff nurses regarding biomedical waste management **(Mimi Lalmuan Puill et al. 2013).**

A Comparative research design study was conducted to determine the effect of video assisted teaching method versus traditional lecture on primary teachers' knowledge and skills regarding first aids management of children's school day accidents among 200 primary school teachers working in various schools in Menoufia. The study showed a statistical significant improvement in total knowledge score of primary school teachers undergoing video-assisted teaching method regarding first aids of children' school day accidents (28.68 ± 3.77) compared to teachers undergoing traditional lecture (12.77 ± 5.00) and also, there was statistical significant

improvement in management skills of primary school teachers undergoing video-assisted teaching method (28.68 ± 3.77) compared to teachers undergoing traditional lecture **(Jaklein R – Younis 2015).**

A Quasi Experimental (one group pre-test and post-test) research design study was done to assess the knowledge on prevention of Swine flu among forty students in selected junior college in Maharastra. The result reveals that average the post test mean score of level of video assisted teaching program 26.13(SD ± 4.142) was higher than the pre test mean score 13 (SD±3.258) the paired 't' value 14.591, So the video assisted teaching was highly effective in increasing knowledge of students regarding prevention of swine flu **(Sheetal Udaykar, 2013).**

Summary:

This chapter deals with the review of literature on various areas like risk factors and prevalence of varicose veins, knowledge on prevention and management of varicose veins and effectiveness of video assisted teaching programme.

CHAPTER-III

METHODOLOGY

This chapter gives a brief description of the methods adopted by the investigator for the study. The present study was designed to determine the effectiveness of knowledge of nurses on prevention and management of varicose veins.. The study was conducted by adopting the following steps of research processes viz. research design, setting, population and sampling, sample size determination, criteria for the selection of samples, instruments and tools for measuring variables, techniques of data collection and methods of data analysis.

3.1 Research approach and design:

The research design selected for this study was **one group pre and post –test design,** a Pre- experimental design.

O_1 ---------- X ---------- O_2

Pre-test (O_1) refers to pre assessment of the staff nurses knowledge on prevention and management of varicose veins and Intervention (X) refers to the video assisted teaching program on prevention and management of varicose veins for staff nurses about 30 to 45 minutes. Post-test (O_2) refers to re-assessment of the same after one week using structured questionnaire.

3.2 Variables of the study:

3.2.1 Independent variable: Video assisted Teaching Programme on prevention and management of varicose veins.

3.2.2 Dependent variable: Knowledge of nurses to prevent and management of varicose veins.

3.2.3 Extraneous variable: age, gender, years of experience, family history of varicose veins, body built, duty hours etc.

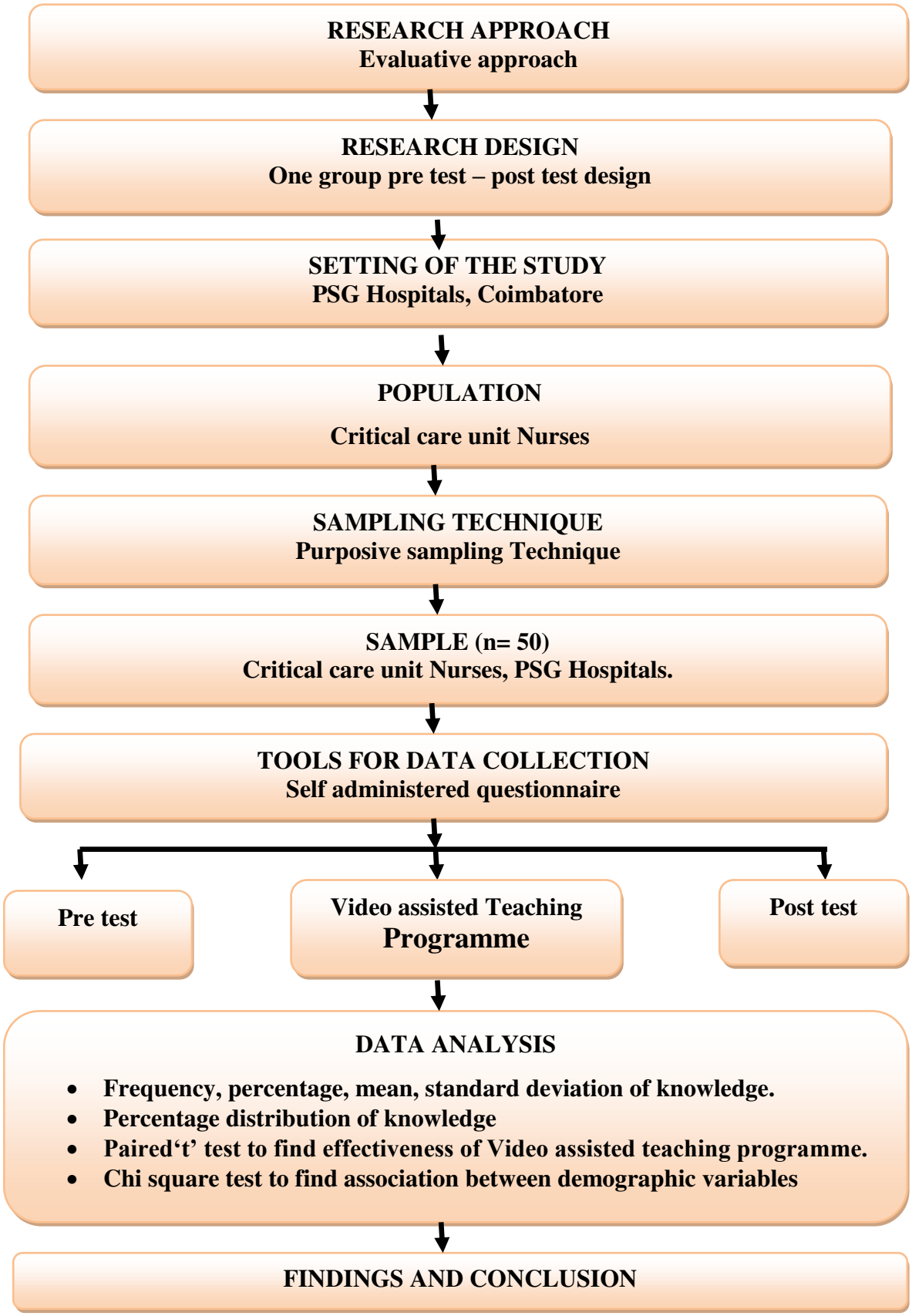

Figure 3.1: Schematic representation on research process

3.3 Setting of the study:

PSG Hospitals is located in Coimbatore, the textile centre and the second biggest city in Tamil Nadu. It is a 1300 bedded multi specialty hospital which offers comprehensive care under one roof. PSG Hospitals has to its credit many trailblazing achievements made possible by combining research, teaching and patient care. It is the first teaching Hospital to get accredited with National Accreditation Board for Hospitals in India. Hence the study is undertaken in PSG Hospitals, Coimbatore. The study was conducted among fifty nurses posted in critical care unit. Critical care unit includes wards such as MICU, KTU, IMCU, ICCU, Neuro ICU, CTICU, POW, Trauma Ward, BICU, Neuro surgery ICU etc. In this MICU consists of 20 beds and fifty nurses with appropriate ventilation facilities, equipments like crash cart, ventilator, infusion pumps and defibrillator. In critical care ward, the nurses work with1:1 ratio. They take care of their patients round the clock. Their patients are totally dependent on their care.

3.4 Population and sampling:

The staff nurses working in critical care unit of PSG Hospitals were selected for study. The study samples were selected based on sampling criteria.

3.4.1 Sampling techniques:

Purposive sampling technique was adopted for selecting the sample.

The sampling technique adopted for the study is purposive sampling.

- Mahajan' s formula
- $N = \frac{4PQ}{L^2}$

P = Mean / Total No. of Nurses working in a month x100

= 58/700 x100 = 8.2

q = 1-p

q = 100-8.2

q= 91.8

L= allowable error (8)

$$n = \frac{4 \times 8.2 \times 91.8}{8 \times 8} = 48$$

Estimated sample size is 48.

Samples:

All nurses working in critical care unit. A total of 50 samples were selected.

3.4.2 Sampling criteria:

Inclusion Criteria:

1. Registered Nurses working in ICU.
2. Nurses who are willing to participate in the study

3.5 Instrument and tools for data collection:

The instrument used for the collection of data was self administered questionnaire. The tool consist of two sections, in section A the questions were about the personal information about the sample. In section B the questions are on the knowledge on prevention and management of varicose veins.

Section A: Demographic Data (it consists of personal information such as age in years, gender, educational status, year of experiences, family history of varicose veins, duty hours, doing regular exercises etc)

Section B: Knowledge on prevention and management of varicose veins.

Part -1	Questions related to knowledge on factors related to varicose veins	(11)
Part -2	Questions related to knowledge on management of varicose veins	(13)
Part -3	Questions related to knowledge on prevention of varicose veins	(06)

Total numbers of questions were 30 each question carries one mark, total mark was 30 **(Annexure IV)**

Interpretation of score:

The level of knowledge was interpreted as follows:

Level of knowledge

Adequate knowledge	= 21-30	(70-100%)
Moderately adequate knowledge	= 11-20	(37-67%)
Inadequate knowledge	= 0-10	(0-33%

3.5.1 Validity and reliability of tool:

The validity of the tool has been determined by expert opinion from different fields along with the objectives of the study. The experts were requested to give their opinion, clarity and appropriateness, suggestions for the modification of the tool and were incorporated in the final tool.

The tool which was used for the study was structured questionnaires, the reliability and the practicability of the tool was tested through pilot study by using split half method. It was computed using Karl Pearson's correlation coefficient method. The reliability of the tool was $r = 0.88$. The tool was found to be reliable and feasible.

3.5.2 Technique of data collection:

Data collection was done from 07-03-2016 to 16.04.16. The samples were selected from critical care unit in PSG Hospitals. Data was collected using self structured questionnaire.

The total Number of 50 nurses was divided into two categories. Each group consists of 25 nurses. At the starting of teaching schedule pretest was conducted with the self administered questionnaire. Then each day 10 staff nurses were called for a class for 45 minutes. Education was given with the help of LCD. Doubts were cleared at the end of

the teaching. Seven days after the education, reassessment was done with the same set of questionnaire.

3.5.3 Data collection procedure:

Data was collected from PSG Hospitals. Samples who met the inclusion criteria were selected by using the purposive sampling techniques for the study. After selecting the sample, data was collected through questionnaire method. .

Steps in data collection:

- Introduction to the research and consent was obtained from the samples.
- Collected the demographic data from the samples.
- Administered the knowledge questionnaire to the samples.
- After the pre-test observation, the required education was given with the help of computer aided tools.
- Post test was conducted with the same questionnaire.

3.6 Ethical approval:

Ethical clearance from the Institutional Human Ethics Committee of PSGIMSR was obtained to conduct the study. A written permission was obtained from the Medical Director and Nursing Superintendent of PSG Hospitals, Coimbatore. The ethical approval certificate is attached in the annexure I.

3.7 Report on the pilot study:

Pilot study was conducted to test the practicability of the tool and feasibility of tool of conducting the study. It was conducted for a period of one week from 31-8-15 to 05-09-15, from post operative ward, PSG hospitals. For pilot study 10 nurses, were selected based upon purposive sampling and according to the inclusion criteria. Pre test was conducted on 31.08.15. From the first day onwards intervention was carried out that is video assisted teaching on definition, causes, risk factors, clinical manifestations, diagnostic evaluation, medical surgical and nursing management, prevention and exercises to prevent varicose veins. The post test was conducted after 7 days on 06.09.15.

The data were tabulated and analyzed using descriptive and inferential statistics. The scores were tabulated based on the mean, standard deviation, paired 't' test and chi-square test. The 'r' value is 0.88 and the results revealed that there is a significant improvement in the knowledge of nurses regarding prevention and management of varicose veins.

3.7.1 Changes brought after the pilot study:

There was no difficulties faced during the pilot study and no changes have made after pilot study.

3.8 Data analysis plan:

The collected data will be analyzed by using the appropriate descriptive and inferential statistics method.

Descriptive statistics:

- Demographic data will be analyzed using frequency and percentage.
- Frequency and percentage will be used for the distribution of samples based on their knowledge regarding prevention and management of varicose veins.
- Mean and standard derivation will be used to assess pre and post-test knowledge of nurses regarding prevention and management of varicose veins.

Inferential statistics:

- Paired't' test will be used to evaluate the effectiveness of video assisted teaching program on the knowledge of nurses regarding prevention and management of varicose veins.
- Chi-square test will be used to find an association between pre-test evaluation of nurses regarding prevention and management of varicose veins and their selected demographic variables.

Chapter summary:

This chapter discussed about the material and methodology followed in the present study. The method used was a one group pre and post –test design. This chapter also dealt with the sample population, sample size, regarding the instruments used and data collection methods. The next chapter will deal on data analysis and interpretation.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

Data analysis is the systematic organization and synthesis of research data and testing of research hypothesis using those data. Interpretation is the process of making sense of the result of the study and examining their implications. Analysis is the method of rendering qualitative data as easily understandable and providing intelligent information about the research problem which will be helpful to study and test the relationship between the variables.

In this study, the effectiveness of video assisted teaching program on knowledge regarding prevention and management of varicose veins among nurses working in critical care unit was assessed. The data was collected, assembled, analyzed and tested individually and described. The findings based on the statistical analysis, presented in this chapter are based on objectives.

Section A: Demographic variables of nurses and assessment of knowledge of Nurses regarding prevention and management of varicose veins.

- Frequency and percentage distribution of nurses according to their demographic data.
- Item wise analysis of frequency and percentage distribution of nurses according to their knowledge score regarding prevention and management of varicose veins.
- Frequency and percentage distribution of nurses according to their pre and post - test knowledge scores regarding prevention and management of varicose veins.

Section B: Effectiveness of Video Assisted teaching program

- The effectiveness of the video assisted teaching program on knowledge regarding prevention and management of varicose veins.

Section C: Association between pre test knowledge score and their selected demographic variables

- Association between pre-test knowledge scores of nurses on prevention and management of varicose veins with selected demographic variables.

Section A: Demographic variables of nurses and assessment of knowledge of Nurses regarding prevention and management of varicose veins.

Table 4. 1 Frequency and percentage distribution of nurses according to their demographic data

n = 50

Demographic Data	Frequency (f)	Percentage (%)
Age		
21-23 years	22	44
24-26 years	25	50
27-29 years	3	06
Gender		
Female	42	84
Male	8	16
Marital Status		
Married	6	12
Unmarried	44	88
Professional Education		
BSc (N)	36	72
GNM	14	28
Year of Experience		
0-2 years	19	38
2-4 years	28	56
4-6 years	3	06
Family History of Varicose Veins		
Yes	10	20
No	40	80
History of varicose veins		
Yes	02	04
No	48	96

Demographic Data	Frequency (f)	Percentage (%)
Duty Hours		
8 Hours	50	100
Doing Regular Exercise		
Yes	8	16
No	42	84
Body Mass Index		
Normal Weight	32	64
Over Weight	03	06
Under Weight	15	30

It is observed that 50 nurses were selected for study, among them (22) 44 % of the nurses were in the age group of 21 to 23 years and (25) 50 % of the nurses were in the age group of 24- 26 years and only (3) 6 % of nurses were between 27 to 29 years of age . Nursing profession is dominated by female gender as (42) 84% of the study samples were Female and the remaining (8) 16 % were male. Major portion of the study samples (44) 88% were unmarried and (6) 12 % were married. Nursing Degree holders were large in number (36) (72%) however, the diploma holders constitute a sizeable number (14) (28%) in the study sample.

The respondents with more experience were less in number as (19) 38 % of nurses have less than 2 years of experience and (3) 6 % nurses have 4 to 6 years of experience and remaining (28) 56 % of them have 2- 4 years of experience. Among 50 of them all (100%) were doing 8 hours duty, that is forty three nurses were working in shift duty pattern (7 am to 2pm, 1 pm to 8 pm and 7 pm to 7am) without rest hours where as seven nurses are working routine duty pattern (7 am to 4 pm , 7 am to 1 pm and 4 pm to 7 pm) and (7 pm to 7 am) with rest hours. Among 50 nurses (8) 16 % nurses were doing exercise regularly and (32) 44 % of them with normal weight and (3) 6 % were overweight and (15) 30% were under weight.

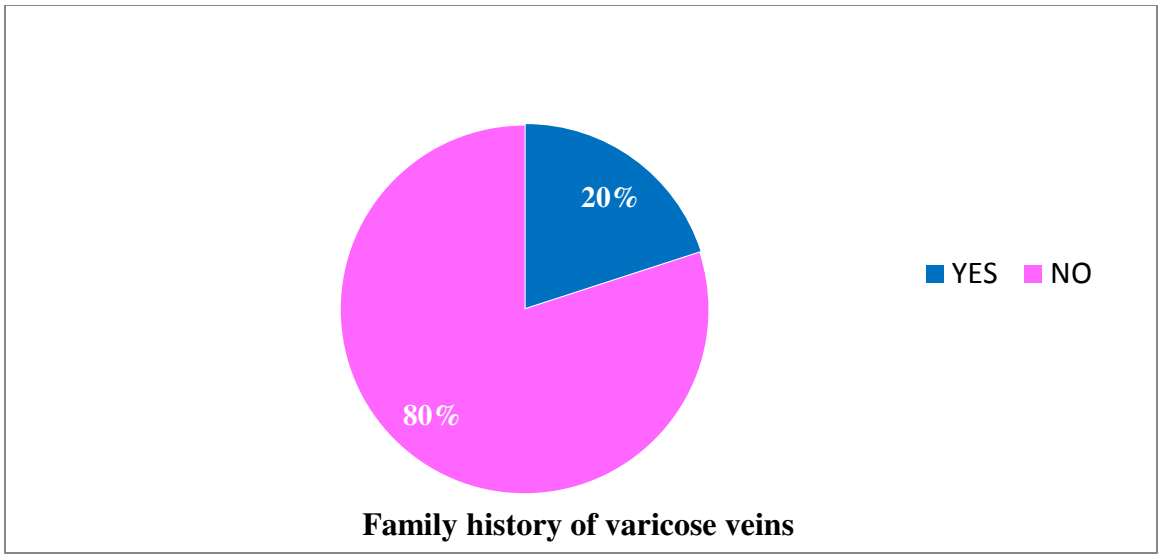

Figure 4.1: Distribution of nurses according to family history of varicose veins

The above figure 4.1 shows that 20 % of them had family history of varicose veins. They are Mill workers, Company workers and doing agriculture.

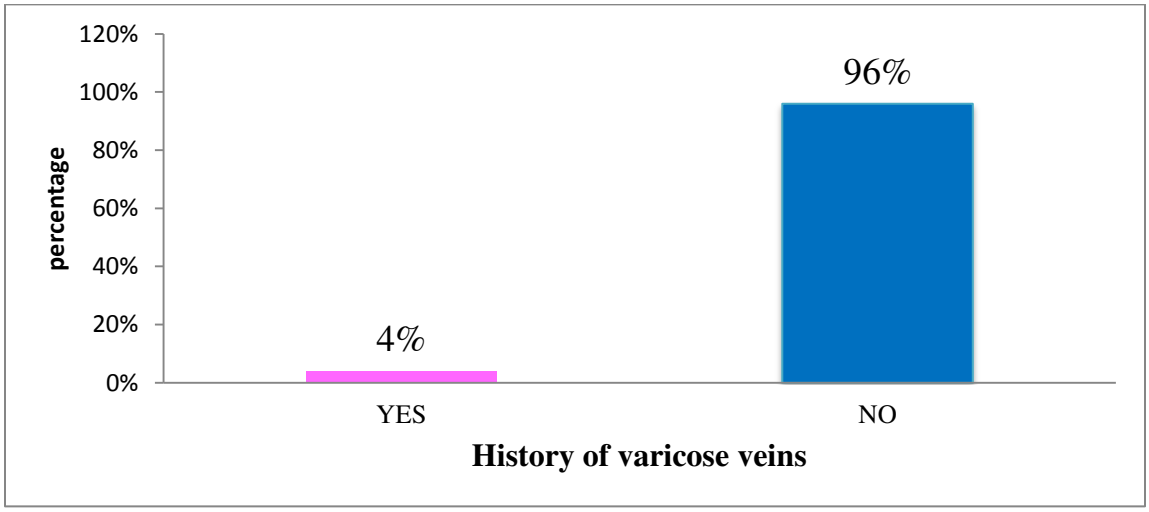

Figure 4.2: Distribution of nurses according to history of varicose veins

Among fifty nurses only 2 (4%) had the history of varicose veins and both are wearing stockings and doing regular exercises.

Table 4.2 Item wise analysis Frequency and percentage distribution of nurses according to their knowledge score regarding prevention and management of varicose veins.

n=50

S.NO	QUESTIONS	PRE TEST		POST TEST	
		f	%	f	%
A. Knowledge on Factors related to Varicose Veins					
1	Definition of varicose veins	42	84	50	100
2	Cause of varicose veins	24	48	43	86
3	Common site of occurrence of varicose veins	7	14	47	94
4	Primary varicose veins	20	40	45	90
5	The most common cause of varicose vein	45	90	50	100
6	Associated risk factor of varicose veins in female	43	86	48	96
7	Symptoms of varicose veins	19	38	45	90
8	Skin colour changes of varicose veins	23	46	46	92
9	Diagnosis of varicose veins	45	90	48	96
10	Telangiectasia	41	82	50	100
11	Potential complication of spider vein	17	34	42	84
B. Knowledge on management of varicose veins					
12	Test commonly used to determine varicose veins	17	34	44	88
13	Action of diosmin used to treat varicose veins	21	42	38	76
14	Use of compression stockings	43	86	47	94
15	Contraindications of using compression stockings	37	74	43	86
16	Ideal pressure of the compression stocking to manage varicose vein	27	54	43	86
17	Reasons for advised to wear compression stocking	25	50	44	88
18	Time to remove compression stockings to prevent complications	22	44	47	94
19	Longevity to wear compression stockings for varicose veins.	8	16	41	82
20	Composite of Unna boot	27	56	43	86
21	Curative management for varicose veins	15	30	43	86

22	Measure after varicose vein surgery	41	82	45	90
23	Sclerotherapy involves in veins	35	70	43	86
24	After sclerotherapy application of elastic bandage to maintain pressure	11	22	41	82
C. Knowledge on prevention of varicose veins					
25	The leg elevation during sleep to prevent varicose veins	8	16	42	84
26	Measure not considered for prevention of varicose veins	15	30	42	84
27	The action which cannot prevent varicose veins	39	78	46	92
28	The activity to reduce pressure in lower limbs while working	16	32	44	88
29	Exercises used to prevent varicose veins	47	94	49	98
30	Exercise helps in varicose veins	2	4	40	80

The above table shows that in pre test the nurses had adequate knowledge about management of varicose veins and inadequate knowledge about the preventive measures of varicose veins and the post test scores were higher than the pre test scores.

In knowledge on factors related to varicose veins, majority of the nurses (86%) had developed adequate knowledge about the causes of varicose veins. Majority of the nurses (94%) had developed adequate knowledge about common site of occurrence of varicose veins. Majority of the nurses (90%) had developed adequate knowledge about primary varicose veins. Majority of the nurses (92%) had developed adequate knowledge about skin colour changes in varicose veins. In pre test only seven nurses only known about the common site of occurrence of varicose veins and in post test majority of the nurses 47(94%) had known about it. Majority of the nurses (84%) had developed adequate knowledge about potential complication of spider vein

In management of varicose veins majority of the nurses were not aware about the test commonly used to determine varicose veins and in post test majority of the nurses 88% had known about it. Majority of the nurses (86%) had developed adequate knowledge about ideal pressure of the compression stocking to manage varicose vein. Majority of the nurses (82%) had developed adequate knowledge about measures to prevent complications of compression stockings. In pre test only eight nurses only knew

about longevity to wear compression stockings for varicose veins and in post test majority of the nurses 82% had known about it. Majority of the nurses (86%) had developed adequate knowledge about composite of Unna boot and curative management of varicose veins. Majority of the nurses (82%) had developed adequate knowledge about application of elastic bandage to maintain pressure after sclerotherapy.

In prevention of varicose veins majority of the nurses were inadequate knowledge about the preventive measures of varicose veins. In pre test only eight nurses have known about leg elevation during sleep to prevent varicose veins and in post test majority of the nurses 84% had known about it. Majority of the nurses (88%) had developed adequate knowledge about activities to reduce pressure in lower limbs while working. In pre test only two nurses only known about exercise helps in varicose veins and in post test majority of the nurses 80% had known about it.

Table 4.3: Analysis and interpretation of knowledge scores of nurses regarding prevention and management of varicose veins.

n= 50

Level of knowledge	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Adequate knowledge	0	0	44	88
Moderately adequate knowledge	38	76	6	12
Inadequate knowledge	12	24	0	0

Distribution of nurses according to their level of knowledge on prevention and management of varicose veins shows that in pre-test 38 nurses (76 %) had moderately adequate knowledge, 12 nurses (24 %) had inadequate adequate knowledge. In the post-test 44 nurses (88%) had adequate knowledge and 6 nurses (12 %) had moderately adequate knowledge after the implementation of the video assisted teaching programme.

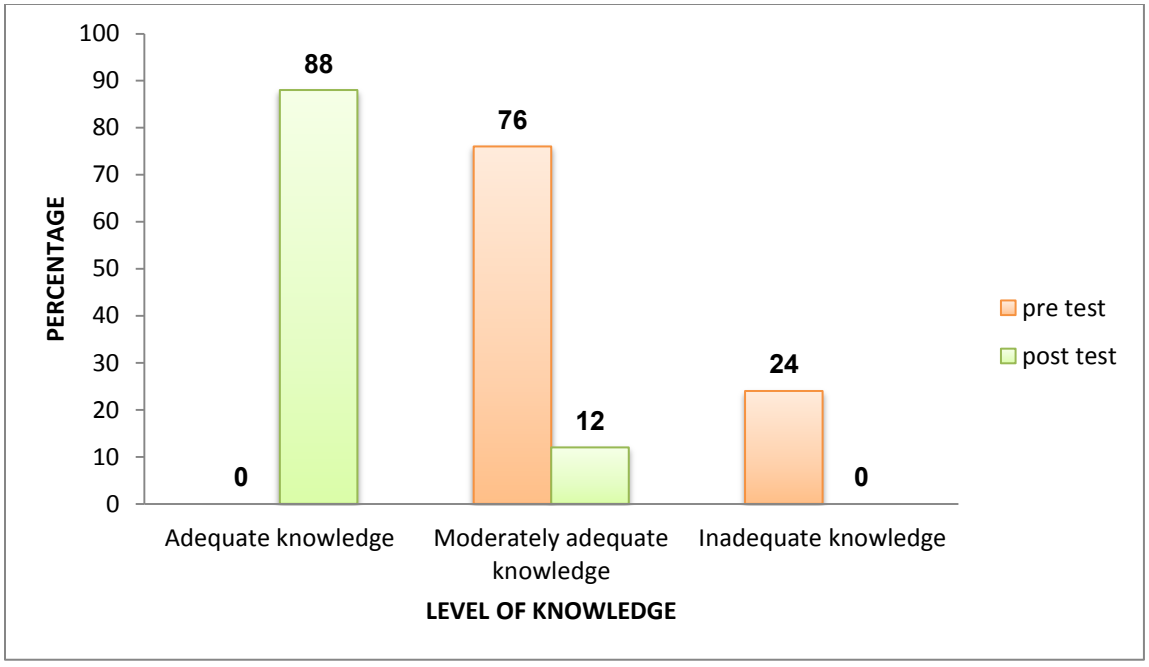

Figure 4.3: Pre and Post-test knowledge scores of nurses

Table 4.4 Aspect wise pre and post-test knowledge score of nurses regarding prevention and management of varicose veins.

n= 50

Section	Pre-test knowledge score			Post-test knowledge score		
	Inadequate knowledge	Moderately adequate knowledge	Adequate knowledge	Inadequate knowledge	Moderately adequate knowledge	Adequate knowledge
Knowledge on factors related to varicose veins	8(16%)	37 (74%)	5 (10%)	0	9(18%)	41(82%)
Knowledge on management of varicose veins	14(28%)	22(44%)	14 (28%)	0	8 (16%)	42(84%)
Knowledge on prevention of varicose veins	20(40%)	29 (58%)	1(2%)	0	13(26%)	37(74%)

The above table shows that frequency and percentage distribution of nurses according to their level of knowledge regarding prevention and management of varicose veins. In pre test, 8 (16%) of nurses had inadequate knowledge on factors related to varicose veins and 37 (74%) of nurses had moderately adequate knowledge and 5 (10%) had adequate knowledge. Inadequate knowledge was mainly in the aspects of common site of occurrence of varicose veins and complications of varicose veins.

Regarding knowledge of management of varicose veins, 14 (28%) of nurses had inadequate knowledge, 22 (44%) of nurses had moderately adequate knowledge and 14 (28%) of nurses had adequate knowledge. They had better knowledge about indications and contra indications of compression stockings and sclerotherapy.

About the knowledge on prevention of varicose veins, the pre test reveals that 20 (40%) of nurses had inadequate knowledge, 29 (58%) of nurses had moderately adequate knowledge and only 1(2%) nurse had adequate knowledge. Majority of nurses

had an idea of activities which reduces pressure in lower limbs and the exercises used to prevent varicose veins.

Whereas in post test 9 (18%) of nurses had moderately adequate knowledge on factors related to varicose veins and 41 (82%) of nurses had adequate knowledge. Moderately adequate knowledge was mainly in the aspect of causes and complications of varicose veins.

Regarding knowledge on management of varicose veins 8(16%) of nurses had moderately adequate and 42 (84%) of nurses had adequate knowledge. Moderately adequate knowledge was mainly in the aspect of action of diosmin used to treat varicose veins, Longevity to wear compression stockings and application of elastic bandage to maintain pressure after sclerotherapy.

Post test reveals that about the knowledge on prevention of varicose veins 13(26%) of nurses had moderately adequate knowledge and 37 (74%) of nurses had adequate knowledge. Moderately adequate knowledge was mainly in the aspect of leg elevation during sleep to prevent varicose veins and exercise helps in varicose veins.

Hence it is concluded that there was a significant improvement in level of knowledge of varicose veins among respondents after undergoing the video assisted teaching programme.

Section B: Effectiveness of Video Assisted teaching program

Table 4.5: Mean, standard deviation scores of nurses' on prevention and management of varicose veins.

n= 50

Aspects	Max. Score	Pre-test			Post-test			Difference in mean percentage
		Mean	SD	Mean (%)	Mean	SD	Mean (%)	
Knowledge of factors related to varicose veins	11	6.50	1.74	59.1%	10.22	1.23	92.9%	33.8%
Knowledge on management of varicose veins	13	6.48	2.53	49.8%	11.32	1.83	87%	37.2%
Knowledge on prevention of varicose veins	06	2.50	0.97	41.6%	5.26	0.85	87.6%	46%
Overall score	30	15.48	4.05	51.6%	26.80	3.27	89.3%	37.7%

Aspects wise pre and post-test knowledge scores of the nurses on prevention and management of varicose veins tabulated above, shows that out of 30 (maximum obtainable score), the mean score was 15.48 ± 4.05 which is around 51.6.8% of the total score, implying a moderately adequate knowledge for the nurses in pre-test where as the post-test results show a mean score of 26.80 ± 3.27 which is around 89.3 % of the total score. The overall difference in mean percentage is 37.7 %, which is a significant improvement.

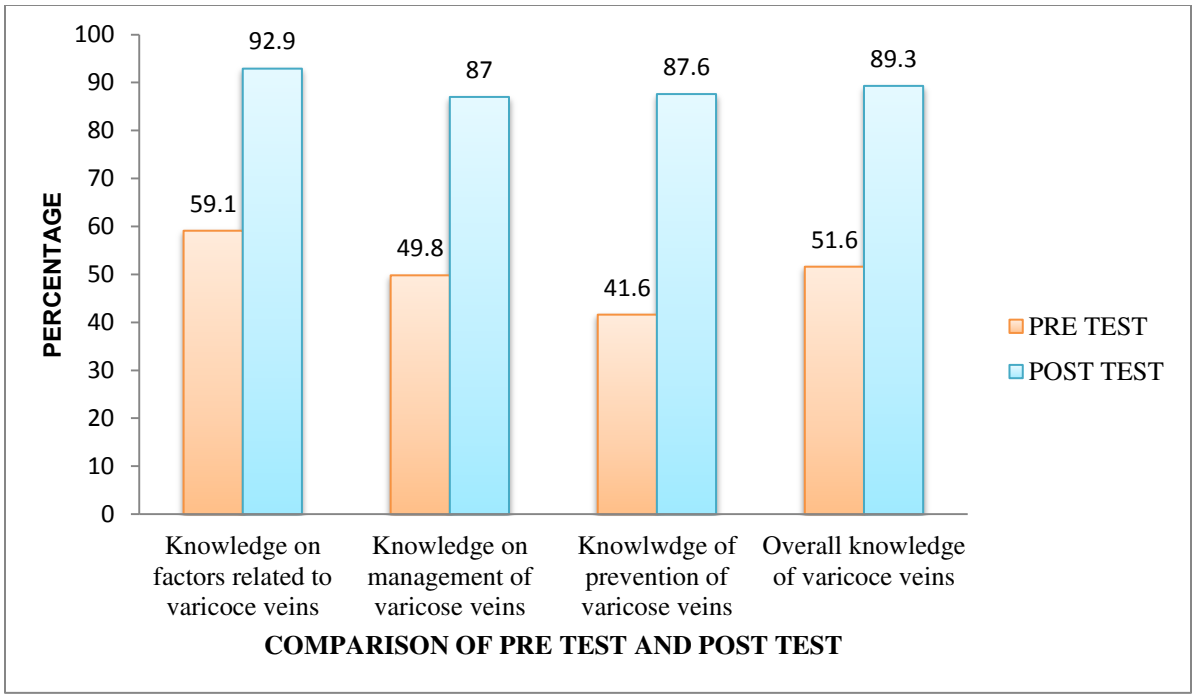

Figure 4.4: Comparison of pre test and post test knowledge score of nurses on prevention and management of varicose veins.

Table 4.6 Aspect wise effectiveness of the video assisting teaching program on nurses regarding prevention and management of varicose veins.

n = 50

SECTION	MAX SCORE	Pre test	Post test	't' Value (Calculated Value)	' t value' (Tabulated Value)
		Mean ± SD	Mean ± SD		
Knowledge on factors related to varicose veins	11	6.50 ± 1.74	10.32 ± 1.10	16.62*	1.676
Knowledge on management of varicose veins	13	6.48 ± 2.53	11.62 ± 1.51	20.36*	
Knowledge on prevention of varicose veins	06	2.50 ± 0.97	5.28 ± 0.83	17.39*	

Note: Statistically significant- *p< 0.05, S- significant

The table 4.6 shows the mean, standard deviation and paired 't' value of knowledge, management and prevention of varicose veins. The post-test mean values were higher than the pre-test mean value. The obtained paired 't' values are higher than the tabulated value ('t' value – 1.67, P<0.05) was highly significant. The mean value of post-test scores was higher than the mean value of pre-test scores.

H_1: There will be a significant difference on mean post test and mean pre test level of knowledge on prevention and management of varicose veins, among nurses. So the hypothesis was accepted.

It is inferred that the nurses had gained adequate knowledge regarding prevention and management of varicose veins after undergoing video assisted teaching programme.

Table 4.7: Effectiveness of the video assisted teaching program of nurses on prevention and management of varicose veins.

n=50

Variables		Mean ± SD of knowledge score	"t" value		P value
			Calculated value	Tabulated value	
Knowledge on prevention and management of varicose veins	Pre test	15.48 ± 4.05	29.25*	1.676	0.00001
	Post test	26.80 ± 3.27			

Note: Statistically significant- *p< 0.05, S- significant

The effectiveness of the video assisted teaching program on prevention and management of varicose veins was measured using paired "t" test. The calculated value for pre and post-test knowledge is 29.25 and the tabulated value is 1.676 at the level of ($p<0.05$), this shows that there is a significant improvement in the knowledge of the nurses after the implementation of video assisted teaching program.

Section C: Association between pre test knowledge score and their selected demographic variables

Table 4.8 Association between pre-test knowledge of nurses regarding prevention and management of varicose veins and their selected demographic variables.

n= 50

Demographic Variables	Level of Knowledge		Degree of freedom	Chi-square value		P value
	Inadequate Knowledge f (%)	Moderate Knowledge f (%)		Calculated value	Tabulated value	
Age in years						
21-25 years	10 (20%)	12 (24%)	2	**10.008***	5.991	.007
24- 26 years	2(4%)	23 (46%)				
27-29 years	-	3 (6%)				
Marital status						
Married	1(2%)	5(10%)	1	0.201	3.841	.654
Unmarried	11(22%)	33(66%)				
Professional education						
BSc (N)	6 (12%)	36 (72%)	1	**5.091***	3.841	.024
GNM	6 (12%)	8 (16%)				
Years of experience						
0-2 years	10 (20%)	09 (18%)	2	**13.848***	5.991	.001
2-4 years	02 (4%)	26 (52%)				
4-6 years	-	03 (6%)				
Family history of varicose veins						
Yes	03(6%)	07 (14%)	1	0.247	3.841	.619
No	09 (18%)	31(62%)				
History of varicose veins						
Yes	-	02(4%)	1	0.658	3.841	.417
No	12 (24%)	36 (72%)				

Note: Statistically significant- *p<0.05, NS- Not significant, S- Significant

H_2: There will be a significant association between the knowledge on prevention and management of varicose veins and their selected demographic variables of the respondents.

It is observed from table 4.8 that the chi square value was lesser than table value for marital status, family history of varicose veins, history of varicose veins and pre test knowledge score of nurses regarding prevention and management of varicose veins and not significant ($p > 0.05$). So the hypothesis was rejected and the alternative hypothesis was accepted,

The chi square value was higher than table value for age, professional education, and year of experience and pre test knowledge score of nurses regarding prevention and management of varicose veins and was significant ($p < 0.05$). Hence the hypothesis was accepted.

It is concluded that in the pre-test the respondents' knowledge of nurses regarding prevention and management of varicose veins was not significant for marital status, family history of varicose veins and history of varicose veins and significant with age, professional education and year of experience.

CHAPTER V

RESULT AND DISCUSSION

This chapter presents a detailed discussion on the major objectives, corresponding findings and observations during the conduct of the study. These findings are also compared with the findings and observations of similar studies.

5.1 Demographic status of the nurses: The age of the nurses ranged from a minimum of 21 years to a maximum of over 29 years. A majority of 25 (50 %) nurses who had participated in the study were in the age group between (24-26 years). A majority of 42 (84%) nurses who had participated in the study were female. The educational statuses of these nurses were B.Sc (N), GNM and among these, 36 nurses (72 %) had a degree in B.Sc (N). The years of experience range from less than 2 years to 6 years, the majority in this case were 28 nurses (56 %) with less 2 to 4 years of experience. 10 (20%) of the nurses were the family history of varicose veins. In this majority of nurses 43 (86%) are working shift duty without rest hours and 7 (14%) nurses are working routine duty with rest hours and among 50 nurses (8) 16 % nurses only doing regular exercise (32) 44 % have normal weight and (3) 6 % have over weight and only (15) 30% have under weight. Among 50 nurses 2(4%) of nurses only having varicose veins and they had pain and itching and wearing stockings.

These findings similar to another study except professional education demonstrated that among 100 staff nurses surveyed to assess the knowledge regarding risk factors and preventive measures of varicose veins, Among 100 nurses, majority (64%) belong to the age group of 25 years, maximum number of subject were female gender (76%), Majority of subjects were single (63%), most subjects belonged to GNM category (56%), About 49% were having 1-5 years of experience (Venisha Pearl Tauro et al, (2015).

The another study supported this study ,the occupational risk factors responsible for lower limb varicose veins among nurses were longer work history (40.42% P- 0.001) longer working hours (>8 hrs 38.70%, p- <0.001) and prolonged orthostatic (standing longer – 57.14%) beside patients bed. They are older in age (28.30%, p- 0.001) and also having a family history of varicose veins (38.70%, p- 0.006). In nurses older age, family history, longer

work history, longer working hours and prolonged standing beside patient bed are major risk factors for developing lower limb varicose vein **(Neeta Misra, 2015).**

5.2 Frequency and percentage distribution of nurses according to their level of knowledge on prevention and management of varicose veins.

The result of this study showed an increase in level of knowledge of the nurses in post test scores. Forty four (88%) had adequate knowledge and 6 (12%) had moderately adequate knowledge after implementation of video assisted teaching program on prevention and management of varicose veins. These findings are similar to a study adopted one group pre test post test design that the self instructional module on prevention of varicose veins among traffic police personnel at Mangalore was very effective by using paired 't ' test ('t' = 24.93, p <0.0001) in increasing the knowledge of traffic police personnel on prevention of varicose veins **(Kapil Sharma, 2013).**

5.3 Aspect wise pre and post-test knowledge of nurses on prevention and management of varicose veins.

From this study, it shows that there was an increase in the level of knowledge of the nurses during post-test, producing a mean score of 26.80 ± 3.27 which is around 89.3 % of adequate knowledge which was achieved after the implementation of video assisted teaching program. The study is supported by a relative study conducted by **Venisha Pearl Tauro in 2015** which shows that the knowledge on prevention and management of varicose veins among nurses shows improvement in post test. Among 100 samples majority of the subjects (61%) were having good knowledge regarding varicose vein, followed by 26% having average knowledge, and 10% were having very good knowledge. The mean percentage of overall level of knowledge was 59.64%.

5.4 The effectiveness of video assisted teaching program on nurses regarding prevention and management of varicose veins.

In this study, the finding shows that there is an increase in the knowledge of the nurses after being exposed to the video assisted teaching program. The results show that there was a significant improvement in the post-test knowledge of the nurses. Hence H1 was statistically

proved and accepted, showing that the video assisted teaching programme regarding prevention and management of varicose veins.

It is supported by findings of Ms**. Rinu. J. George, 2009** conducted in a study to assess the effectiveness of a video assisted teaching programme on knowledge regarding non pharmacological methods of pain management in children among staff nurses working in pediatric wards of selected hospitals at Tumkur. The convenience sample consisted of 265 nurses working on children's wards in university hospitals. Data were collected using an instrument designed for the study. The results showed gaps in the knowledge base of nurses with regard to non pharmacological pain management in children. The education and the area of expertise were significant influences on knowledge scores. Nurses should take a more active role in seeking new information and also should be encouraged to use non pharmacological methods that let the children be active participants in their own care. The pretest mean value was 9.37 with a standard deviation of 2.659. The posttest mean value was 18.53 with a standard deviation of 2.374. Difference between the pretest and posttest score was found to be statistically significant.

5.5 Association between pre-test knowledge of nurses about prevention and management of varicose veins and their selected demographic variables.

In this study, an association was found between pre test knowledge scores and selected demographic variables like age in years, professional education, and years of experience respectively by using chi-square (χ^2). There was significant association between age, professional education and years of experience and pre test knowledge scores of nurses and not significantly among marital status, family history of varicose veins and history of varicose veins.

A similar study done regarding knowledge of nurses regarding varicose veins shows that the association between the level of knowledge and selected demographic variables exposed that there was significant association between the level of knowledge and marital status, academic qualification, years of experience in the present ward and Source of Knowledge. It was also evident from the study that there was no significant association between the level of knowledge with other demographic variables like age, gender, professional experience and previous information regarding varicose veins (**Venisha Pearl Tauro et al, (2015).**

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CHAPTER VI

SUMMARY AND CONCLUSION

This study was conducted to assess the effectiveness of structured teaching program for nurses administering intravenous administration of chemotherapy. Relevant literatures were reviewed to enrich the knowledge on the selected specialization that is the intervention structured teaching, selecting an appropriate conceptual model, developing a frame work and research plan.

The research design adopted for this study was pre and post-test design, it is a type of quasi experimental design. The study was conducted in PSG Hospitals, Coimbatore. Using purposive sampling technique, 50 nurses working in critical care unit were selected for this study.

Validity and reliability of the tool was tested through pilot study. According to the selection criteria, the nurses were selected for the study. A self administered questionnaire was used to assess the knowledge level of nurses. The data was collected after ethical approval, from 07.3.2016 to 16.4.2016. The pre-test level of knowledge was assessed and video assisted teaching was provided for the nurses for about 45 minutes. Post test was conducted after 7 days. Both the descriptive and inferential statistics were used to analyze the data. Paired "t" was used to evaluate the effectiveness of video assisted teaching program on prevention and management of varicose veins. Chi-square was used to find the association between pre-test evaluations of nurses regarding prevention and management of varicose veins and their selected demographic variables.

6.1 Major findings of the study

- Less than half of the nurses 44% (22) were the age group of 21 to 23 years.
- Eighty four percentage (44) nurses were unmarried.
- Majority of the nurses 72% (36) had B.Sc (N) qualification.
- More than half of the nurses 56% (23) had two to four years of experience.
- Twenty Percentage of the nurses had the family history of varicose veins.
- Majority of the nurses 84% (42) were not doing regular exercise.

- More than half of the nurses 64% (32) had normal body mass index.
- Majority of the nurses 76% (38) had moderately adequate knowledge and 24% (12) had inadequate knowledge. After the video assisted teaching programme, knowledge level was improved in which most of the nurses, 88% (44) had adequate knowledge and 12% (6) had moderately adequate knowledge.
- There was an association (χ^2=10.008, p<0.05,) between pre test knowledge of nurses and their age and years of experience.
- There was an association (χ^2= 5.091, p<0.05,) between pre test knowledge of nurses and their professional education.
- There was no association (χ^2 = 0.247, p<0.05,) between pre test knowledge of nurses and their marital status, family history of varicose veins and history of varicose veins.

6.2 Conclusion:

The primary responsibility of a healthcare professional is to create awareness and to provide necessary information through continuous education which will help in developing a positive attitude. In this study, majority of the nurses had moderately adequate knowledge after the video assisted teaching more than half of the nurses gained adequate knowledge. The study found that video assisted teaching program on prevention and management of varicose veins has helped to develop additional knowledge about the same. Hence, video assisted teaching helps the nurses to be aware of the prevention and management of varicose veins, so they may protect themselves as well as the patients.

6.3 Nursing implications:

6.3.1 Nursing education

- Special training programs need to be incorporated in both undergraduate and graduate programs.
- Educating the nurses regarding prevention and management of varicose veins and life style modification.
- Continuous education among the staff nurses will help to promote and update their knowledge on prevention and management of varicose veins.

6.3.2 Nursing practice

- Since the present study would enable the nurses to become aware about prevention and management of varicose veins. Protocol can be issued to respective wards which will help to reinforce the nurses regarding prevention of varicose veins.
- Suggest for foot stool when nurses leave have stand and work. e.g.: Documentation.
- Recommended the nurses to be seated while doing documentation.
- Advised to do mild exercise and walking to prevent varicose veins.
- To elevate the legs while sleeping.

6.3.3 Nursing administration

- Periodical arrangement of in-service education, continuing education and training programs for staff nurses.
- Protocols should be made in the wards regarding the prevention and management of varicose veins.

6.3.4 Nursing research

- Studies can be conducted regarding knowledge on life style practices to prevent varicose veins.
- The findings of the study can be utilized for conducting research using large sample.
- The research can be utilized for conducting research on different specialized departments in the hospital setting.

6.4 Limitations

- This study was conducted only in a selected ward which imposed limitations in generalization of findings.
- It is difficult to gather all the staff nurses at the same time to conduct for video assisted teaching programme.
- This study did not explore the practices after imparting knowledge on prevention and management of varicose veins.

6.5 Recommendations for further study

On the basis of the study the following recommendations were made.

- A similar study can be replicated on a larger sample size to generalize the findings.
- A study can be conducted by using other strategies like booklets, pamphlets, flashcards etc.
- A comparative study can be undertaken with the control group and the experimental group.
- An observational study can be done on practice of nurses regarding the prevention and management of varicose veins.

Summary:

This chapter dealt with the summary of the followed by its implications in nursing, nursing practice and nursing research. This chapter also spreads light on the limitations and recommendations.

ANNEXURE –I

PERMISSION LETTER

From

Shangeetha.D
I Year M.Sc Nursing
PSG College of Nursing
Peelamedu
Coimbatore-4

To
Dr Vimalkumar Govindan
Medical Director
PSG Hospitals
Coimbatore-4

Through: The Principal, PSG College of Nursing

Respected Sir,

Sub: Seeking permission to carry out the study in PSG Hospitals, Coimbatore.

I Shangeetha. D, I year M.Sc. Nursing student is interested in doing this study. **"A Study to assess the effectiveness of video assisted teaching program on knowledge regarding prevention and management of varicose veins among nurses working in critical care unit at PSG Hospital, Coimbatore"**. Kindly grant me permission to carry out the study.

Thanking You

Date: 3.4.15

Yours sincerely

D. Shangeetha
Shangeetha. D
I year M.Sc Nursing

Place: Coimbatore

Signature of Medical Director:

will need Ethics approval.

Dr. Vimal Kumar Govindan, MS,FRCS,(Edn.)
Medical Director
PSG Hospitals
Peelamedu, Coimbatore-641 004.

PERMISSION LETTER

From

Shangeetha.D
I Year M.Sc Nursing
PSG College of Nursing
Peelamedu
Coimbatore-4

To
Mrs. Malliga.S
Nursing Superintendent
PSG Hospitals
Coimbatore-4

Through: The Principal, PSG College of Nursing

Respected Madam,

Sub: Seeking permission to carry out the study in PSG Hospitals, Coimbatore.

I Shangeetha. D, I year M.Sc. Nursing student is interested in doing this study. **"A Study to assess the effectiveness of video assisted teaching program on knowledge regarding prevention and management of varicose veins among nurses working in critical care unit at PSG Hospital, Coimbatore"**. Kindly grant me permission to carry out the study.

Thanking You

Date: 8.7.15

Yours sincerely

D. Shangeetha
Shangeetha. D
I year M.Sc Nursing

Place: Coimbatore

Signature of Nursing Superintendent:

P.S.G. HOSPITALS PIN: 641004. PEELAMEDU

ANNEXURE –II

PSG Institute of Medical Sciences & Research
Institutional Human Ethics Committee
Recognized by The Strategic Initiative for Developing Capacity in Ethical Review (SIDCER)
POST BOX NO. 1674, PEELAMEDU, COIMBATORE 641 004, TAMIL NADU, INDIA
Phone : 91 422 - 2598822, 2570170, Fax : 91 422 - 2594400, Email : ihec@psgimsr.ac.in

To
Ms Shangeetha D
I M Sc Nursing
PSG College of Nursing
Coimbatore

Ref: Project No.15/240

Date: July 22, 2015

Dear Ms Shangeetha,

Institutional Human Ethics Committee, PSG IMS&R reviewed and discussed your application dated 09.07.2015 to conduct the research study entitled *"A study to assess the effectiveness of video assisted teaching program on knowledge regarding prevention and management of varicose veins among nurses working in critical care unit at PSG Hospital, Coimbatore"* during the IHEC meeting held on 10.07.2015.

The following documents were reviewed and approved:

1. Project Submission form
2. Study protocol
3. Informed consent forms
4. Data collection tool
5. Permission letter from Medical Director and concerned Head of Department
6. Current CVs of Principal investigator, Co-investigator
7. Budget

The following members of the Institutional Human Ethics Committee (IHEC) were present at the meeting held on 10.07.2015 at IHEC Secretariat, PSG IMS & R between 10.00 am and 11.00 am:

Sl. No.	Name of the Member of IHEC	Qualification	Area of Expertise	Gender	Affiliation to the Institution Yes/No	Present at the meeting Yes/No
1	Dr. P. Sathyan (Chairperson, IHEC)	DO, DNB	Clinician (Ophthalmology)	Male	No	Yes
2	Dr. S. Bhuvaneshwari (Member-Secretary, IHEC)	MD	Clinical Pharmacology	Female	Yes	Yes
3	Dr. S.Shanthakumari	MD	Pathology, Ethicist	Female	Yes	Yes
4	Dr Sudha Ramalingam	M.D	Epidemiologist Alt. Member – Secretary	Female	Yes	Yes
5	Dr D Vijaya	M Sc., Ph D	Basic Medical Sciences (Biochemistry)	Female	Yes	Yes

The study is approved in its presented form. The decision was arrived at through consensus. Neither PI nor any of proposed study team members were present during the decision making of the IHEC. The IHEC functions in accordance with the ICH-GCP/ICMR/Schedule Y guidelines. The approval is valid until one year from the date of sanction. You may make a written request for renewal / extension of the validity, along with the submission of status report as decided by the IHEC.

PSG Institute of Medical Sciences & Research
Institutional Human Ethics Committee
Recognized by The Strategic Initiative for Developing Capacity in Ethical Review (SIDCER)
POST BOX NO. 1674, PEELAMEDU, COIMBATORE 641 004, TAMIL NADU, INDIA
Phone : 91 422 - 2598822, 2570170, Fax : 91 422 - 2594400, Email : ihec@psgimsr.ac.in

Following points must be noted:

1. IHEC should be informed of the date of initiation of the study
2. Status report of the study should be submitted to the IHEC every 12 months
3. PI and other investigators should co-operate fully with IHEC, who will monitor the trial from time to time
4. At the time of PI's retirement/intention to leave the institute, study responsibility should be transferred to a colleague after obtaining clearance from HOD, Status report, including accounts details should be submitted to IHEC and extramural sponsors
5. In case of any new information or any SAE, which could affect any study, must be informed to IHEC and sponsors. The PI should report SAEs occurred for IHEC approved studies within 7 days of the occurrence of the SAE. If the SAE is 'Death', the IHEC Secretariat will receive the SAE reporting form within 24 hours of the occurrence
6. In the event of any protocol amendments, IHEC must be informed and the amendments should be highlighted in clear terms as follows:
   a. The exact alteration/amendment should be specified and indicated where the amendment occurred in the original project. (Page no. Clause no. etc.)
   b. Alteration in the budgetary status should be clearly indicated and the revised budget form should be submitted
   c. If the amendments require a change in the consent form, the copy of revised Consent Form should be submitted to Ethics Committee for approval
   d. If the amendment demands a re-look at the toxicity or side effects to patients, the same should be documented
   e. If there are any amendments in the trial design, these must be incorporated in the protocol, and other study documents. These revised documents should be submitted for approval of the IHEC and only then can they be implemented
   f. Any deviation-Violation/waiver in the protocol must be informed to the IHEC within the stipulated period for review
7. Final report along with summary of findings and presentations/publications if any on closure of the study should be submitted to IHEC

Kindly note this approval is subject to ratification in the forthcoming full board review meeting of the IHEC.

Thanking You,

Yours Sincerely,

SECRETARY
PSG IMS&R
COIMBATORE-641004.
INSTITUTIONAL HUMAN ETHICS COMMITTEE

Dr S Bhuvaneshwari
Member - Secretary
Institutional Human Ethics Committee

ANNEXURE-III

PSG Institute of Medical Science and Research, Coimbatore
Institutional Human Ethics Committee
INFORMED CONSENT FORMAT FOR RESEARCH PROJECTS

Healthy participants information sheet

I Shangeetha.D, am carrying out a study on the topic: **"A Study to assess the effectiveness of video assisted teaching program on knowledge regarding prevention and management of varicose veins among nurses working in critical care unit at PSG Hospital, Coimbatore"**as part of my research project being carried out under the aegis of the Department of: Nursing.

My research guide is: Mrs.Leena.J, Associate Professor PSG College of Nursing /
Dr. G. Malarvizhi, Vice Principal PSG College of Nursing

Justification for the study:

The nursing professionals are forced to stand for a long time for providing client care especially when they are posted in Critical care unit. Lack of rest and exercise for the calf muscles may lead to decrease in tone of those "second heart of the body". This which it turn leads to the leaflet valves incompetence which then causing the varicose veins in staff nurses. A lot more factors cause nurses especially female nurses, prone to varicose veins. So there is a need to educate the Critical care unit nurses regarding this condition in order to prevent it

The objectives of this study are:

Primary Objective:

1. Assess the knowledge on prevention and management of varicose veins among critical care unit Nurses.

Secondary Objective:

1. Evaluate the effectiveness of video assisted teaching programme on knowledge regarding prevention and management of varicose Veins.
2. Determine the association between knowledge scores of critical care unit nurses on prevention and management of varicose veins with selected demographic variables.

Sample size: 50.

Study volunteers / participants are (specify population group & age group): Nurses who are working in critical care unit.

Location: PSG Hospitals, Coimbatore

I request you to kindly cooperate with me in this study. We propose collect background information and other relevant details related to this study. We will be carrying out:

Data collected will be stored for a period of __5___ years. We will not use the data as part of another study.

Benefits from this study: Video assisted teaching program can increase knowledge of nurses regarding prevention and management of varicose veins.

Projected outcome of the study: Video assisted teaching program could help to improve the knowledge regarding prevention and management of varicose veins.

Signature / Left thumb impression of the Study Volunteer / Legal Representative:

Signature of the Interviewer with date: Witness:

Contact number of PI:9788559588
Contact number of Ethics Committee Office: 0422 2570170 Extn.: 5818

INFORMED CONCERN FOR HEALTHY PARTICIPANT'S

The above information regarding the study, has been read by me/ read to me, and has been explained to me by the investigator/s. Having understood the same, I hereby give my consent to them to interview me. I am affixing my signature / left thumb impression to indicate my consent and willingness to participate in this study (i.e., willingly abide by the project requirements).

Signature / Left thumb impression of the Study Volunteer / Legal Representative:

Signature of the Interviewer with date: Witness:

Contact number of PI: 9788559588
Contact number of Ethics Committee Office: 0422 2570170 Extn.: 5818

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§¾¾¢ :

°í¸£¾¡.Ð, ¬¸¢Â ¿¡ý, À¢. ±Š. ƒ¢. ÁÕòÐÅì ¸øæÃ¢Â¢ý, ¦°Å¢Ä¢Â÷ Ð¨ÈÂ¢ý ¸£ú, **¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ¾ÎôÒ ÁüÚõ °¢¸¢î¨° Ó¨È¨Â ¸üÚì¦¸¡Îò¾ø ãÄõ ¦°Å¢Ä¢ÂÃ¢ý «È¢×ò¾¢È¨É ÅÇ÷ò¾ø"** ±ýÈ ¾¨ÄôÀ¢ø ¬ö× §Áü¦¸¡ûÇ ¯û§Çý.

±ý ¬ö× ÅÆ¢¸¡ðÊ: Ð¨½ ¯¾Å¢ §ÀÃ¡°¢Ã¢¨Â ¾¢ÕÁ¾¢. Ä£É¡,

¬ö× §Áü¦¸¡ûÅ¾ü¸¡É «ÊôÀ¨¼:
¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ÅÕÅ¾ü¸¡É ¬ÀòÐ ¸¡Ã½¢¸û ÅÂÐ,
Å¡Ä¢Éõ, ¯¼ø ÀÕÁý,
¸÷ôÀõ , ÌÎõÀ ÅÃÄ¡Ú, ¿£ñ¼ §¿Ãõ ¿¢üÈø ¬¸¢ÂÉ.
¦°Å¢Ä¢Â÷¸éìÌ À¡Ä¢Éõ ÁüÚõ ¿£ñ¼ §¿Ãõ ¿¢üÈø ¬¸¢Â ¬ÀòÐ
¸¡Ã½¢¸û ¯ûÇÉ. §ÁÖõ ¾£Å¢Ã °¢¸¢î¨° À¢Ã¢Å¢ø §¿¡Â¡¸
À¡Ð¸¡ì¸ ¿£ñ¼ §¿Ãõ ¿¢ü¸ §ÅñÊÅ ¸ð¼¡Âò¾¢ø ¯ûÇÉ÷.

¬öÅ¢ý §¿¡ì¸õ:

- ¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ÀüÈ¢Â «È¢×ò¾¢È¨É ¦°Å¢Ä¢Â÷¸Ç¢¨¼§Â ¸ñ¼È¢¾ø.
- ¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ¾ÎôÒ ÁüÚõ °¢¸¢î¨° Ó¨È¨Â ÀüÈ¢ ¸üÚì¦¸¡Îò¾Ä¢ý À¢ýÀ¡¸ ¦°Å¢Ä¢ÂÃ¢ý «È¢× ÅÇ÷î°¢¨Â ¸ñ¼È¢¾ø.

¬öÅ¢ø ÀíÌ ¦ÀÚõ ¿À÷¸Ç¢ý ±ñ½¢ì¨¸: 50

¬ö× §Áü¦¸¡ûÙõ Þ¼õ: À¢. ±Š. ƒ¢. ÁÕòÐÅÁ¨É, §¸¡ÂõÒòà÷.

¬öÅ¢ý ÀÄý¸û:
¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ¾ÎôÒ ÁüÚõ °¢¸¢î¨° Ó¨È¨Â Å£Ê§Âì ¯¾Å¢Ô¼É¡É ÅÆ¢Â¡¸ ¸üÚì¦¸¡Îò¾¾¢ý ãÄÁ¡¸ ¦°Å¢Ä¢ÂÃ¢ý «È¢× ¾¢ÈÉ¢ø Óý§ÉüÈõ ²üÀÎõ.

¬öÅ¢É¡ø ²üÀÎõ «¦°ª¸Ã¢Âí¸û / Àì¸ Å¢¨Ç×¸û: Àì¸ Å¢¨Ç×¸û ±Ð×õ Þø¨Ä.

Þó¾ ¬öÅ¢ø ¸¢¨¼ìÌõ ¾¸Åø¸û 5 ÅÕ¼í¸û À¡Ð¸¡ì¸ôÀÎõ. Þ¨Å §ÅÚ ±ó¾ ¬öÅ¢üÌõ ÀÂýÀÎò¾ôÀ¼ Á¡ð¼¡Ð. ±ó¾ ¿¢¨ÄÅ¢Öõ ¯í¸¨Çô ÀüÈ¢Â ¾¸Åø¸û Â¡ÕìÌõ ¦¾Ã¢Å¢ì¸ôÀ¼Á¡ð¼¡Ð. «¨Å ÞÃ¸°¢ÂÁ¡¸ ¨Åì¸ôÀÎõ.

±ó¾ §¿Ãò¾¢ø §ÅñÎÁ¡É¡Öõ ¬öÅ¢Ä¢ÕóÐ Å¢Ä¸¢ì¦¸¡ûÙõ ¯Ã¢¨Á ¯í¸Ùì¸ ¯ñÎ. ¬öÅ¢Ä¢ÕóÐ Å¢Ä¸¢ì¦¸¡ûÅ¾¡ø ¯í¸Ùì¸ «Ç¢ì¸ôÀÎõ °¢¸¢î¨°Â¢ø ±ó¾ Å¢¾ Á¡üÈÓõ ÞÕì¸¡Ð.

Þó¾ ¬Ã¡öî°¢ì¸¡¸ ¯í¸Ç¢¼õ °¢Ä §¸ûÅ¢¸û §¸ð¸ôÀÎõ.

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¬ö×ìÌðÀÎÀÅÃ¢ý ´ôÒ¾ø ÀÊÅõ

¿¡ý þó¾ ¬Ã¡öî°¢Â¢ý §¿¡ì¸õ ÁüÚõ «¾ý ÀÂýÀ¡ðÊ¨Éô ÀüÈ¢ ¦¾Ç¢Å¡¸×õ, Å¢Çì¸Á¡¸×õ ¦¾Ã¢ÂôÀÎò¾ô ÀðÎû§Çý. þó¾ ¬Ã¡öî°¢Â¢ø ÀíÌ ¦¸¡ûÇ×õ, þó¾ ¬Ã¡öî°¢Â¢ý ÁÕòÐÅ Ã£¾¢Â¡É ÌÈ¢ôÒ¸¨Ç ÅÕõ ¸¡Äò¾¢Öõ ¯À§Â¡¸ôÀÎò¾¢ì ¦¸¡ûÇ×õ ÓØ ÁÉÐ¼ý °õÁ¾¢ì¸¢§Èý.

¬ö×ìÌðÀÎÀÅÃ¢ý ¦ÀÂ÷, Ó¸ÅÃ¢:

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§¾¾¢:

¬öÅ¡ÇÃ¢ý ¦¾¡¨Ä§À°¢ ±ñ: 9788559588
ÁÉ¢¾ ¦¿Ê¢Ó¨Èì ÌØ «ÖÅÄ¸ò¾¢ý ¦¾¡¨Ä§À°¢ ±ñ: 0422 2570170 Extn.: 5818

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°í¸£¾¡.Ð, ¬¸¢Â ¿¡ý, À¢. ±Š. ƒ¢. ÁÕòÐÅì ¸øæÃ¢Â¢ý, ¦°Å¢Ä¢Â÷ Ð¨ÈÂ¢ý ¸£ú, **¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ¾ÎôÒ ÁüÚõ °¢¸¢î¨° Ó¨È¨Â ¸üÚì¦¸¡Îò¾ø ãÄõ ¦°Å¢Ä¢ÂÃ¢ý «È¢×ò¾¢È¨É ÅÇ÷ò¾ø"** ±ýÈ ¾¨ÄôÀ¢ø ¬ö× §Áü¦¸¡ûÇ ¯û§Çý.

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¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ÅÕÅ¾ü¸¡É ¬ÀòÐ ¸¡Ã½¢¸û ÅÂÐ,
À¡Ä¢Éõ, ¯¼ø ÀÕÁý,
¸÷ôÀõ , ÌÎõÀ ÅÃÄ¡Ú, ¿£ñ¼ §¿Ãõ ¿¢üÈø ¬¸¢ÂÉ. ¦°Å¢Ä¢Â÷¸éìÌ
À¡Ä¢Éõ ÁüÚõ ¿£ñ¼ §¿Ãõ ¿¢üÈø ¬¸¢Â ¬ÀòÐ ¸¡Ã½¢¸û ¯ûÇÉ.
§ÁÖõ ¾£Å¢Ã °¢¸¢î¨° À¢Ã¢Å¢ø §¿¡Â¡¸
À¡Ð¸¡ì¸ ¿£ñ¼ §¿Ãõ ¿¢ü¸ §ÅñÊÂ ¸ð¼¡Âò¾¢ø ¯ûÇÉ÷.

¬öÅ¢ý §¿¡ì¸õ:

- ¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ÀüÈ¢Â «È¢×ò¾¢È¨É ¦°Å¢Ä¢Â÷¸Ç¢¨¼§Â ¸ñ¼È¢¾ø.
- ¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ¾ÎôÒ ÁüÚõ °¢¸¢î¨° Ó¨È¨Â ÀüÈ¢ ¸üÚì¦¸¡Îò¾Ä¢ý À¢ýÀ¡¸ ¦°Å¢Ä¢ÂÃ¢ý «È¢× ÅÇ÷î°¢¨Â ¸ñ¼È¢¾ø.

¬öÅ¢ø ÀíÌ ¦ÀÚõ ¿À÷¸Ç¢ý ±ñ½¢ì¨¸: 50

¬ö× §Áü¦¸¡ûÙõ Þ¼õ: À¢. ±Š. ƒ¢. ÁÕòÐÅÁ¨É, §¸¡ÂõÒòà÷.

¬öÅ¢ý ÀÄý¸û:
¸¡Ä¢ø ¿ÃõÒ ÍÕÙ¾ø §¿¡ö ¾ÎôÒ ÁüÚõ °¢¸¢î¨° Ó¨È¨Â Å£ÊŠÅ¡ ¯¾Å¢Ô¼É¡É ÅÆ¢Â¡ ¸üÚì¦¸¡Îò¾¾¢ý ãÄÁ¡¸ ¦°Å¢Ä¢ÂÃ¢ý «È¢× ¾¢ÈÉ¢ø ÓýŠÉüÈõ ²üÀÎõ.

¬öÅ¢É¡ø ²üÀÎõ «¦°ª¸Ã¢Âí¸û / Àì¸ Å¢¨Ç×¸û: Àì¸ Å¢¨Ç×¸û ±Ð×õ Þø¨Ä.

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±ó¾ §¿Ãò¾¢ø §ÅñÎÁ¡É¡Öõ ¬öÅ¢Ä¢ÕóÐ Å¢Ä¸¢ì¦¸¡ûÙõ ¯Ã¢¨Á ¯í¸ÙìÌ ¯ñÎ. ¬öÅ¢Ä¢ÕóÐ À¢Ä¸¢ì¦¸¡ûÅ¾¡ø ¯í¸ÙìÌ «Ç¢ì¸ôÀÎõ °¢¸¢î¨°Â¢ø ±ó¾ Å¢¾ Á¡üÈÓõ þÕì¸¡Ð.

þó¾ ¬Ã¡öî°¢ì¸¡¸ ¯í¸Ç¢½õ °¢Ä §¸ûÅ¢¸û §¸ð¸ôÀÎõ.

§ÁÖõ, þó¾ ¬öÅ¢ø ÀíÌ ¦¸¡ûÅÐ ¯í¸û ¦°¡ó¾ Å¢ÕôÀõ. þ¾¢ø ±ó¾ Å¢¾ì ¸ð¼¡ÂÓõ þø¨Ä. ¿£í¸û Å¢ÕôÀô Àð¼¡ø, þó¾ ¬öÅ¢ý ÓÊ×¸û ¯í¸ÙìÌò ¦¾Ã¢Âô ÀÎò¾ôÀÎõ.

¬öÅ¡ÇÃ¢ý ¨¸¦Â¡ôÀõ :

§¾¾¢ :

¬ö×ìÌðÀÎÀÅÃ¢ý ´ôÒ¾ø ÀÊÅõ

¿¡ý þó¾ ¬Ã¡öî°¢Â¢ý §¿¡ì¸õ ÁüÚõ «¾ý ÀÂýÀ¡ðÊ¨Éô ÀüÈ¢ ¦¾Ç¢Å¡¸×õ, Å¢Çì¸Á¡¸×õ ¦¾Ã¢ÂôÀÎò¾ô ÀðÎû§Çý. þó¾ ¬Ã¡öî°¢Â¢ø ÀíÌ ¦¸¡ûÇ×õ, þó¾ ¬Ã¡öî°¢Â¢ý ÁÕòÐÅ Ã£¾¢Â¡É ÌÈ¢ôÒ¸¨Ç ÅÕõ ¸¡Äò¾¢Öõ ¯À§Â¡¸ôÀÎò¾¢ì ¦¸¡ûÇ×õ ÓØ ÁÉÐ¼ý °õÁ¾¢ì¸¢§Èý.

¬ö×ìÌðÀÎÀÅÃ¢ý ¦ÀÂ÷, Ó¸ÅÃ¢:

¨¸¦Â¡ôÀõ:
§¾¾¢:

¬öÅ¡ÇÃ¢ý ¦¾¡¨Ä§À°¢ ±ñ: 9788559588
ÁÉ¢¾ ¦¿È¢Ó¨Èì ÌØ «ÖÅÄ¸ò¾¢ý ¦¾¡¨Ä§À°¢ ±ñ: 0422 2570170
Extn.: 5818

ANNEXURE-IV

TOOL FOR DATA COLLECTION

Section A

Demographic Data

1. Sample No :
2. Age in years : ……
3. Gender : Male / Female
4. Marital status : Married / Unmarried
5. Professional Education : GNM / BSc (Nursing)
6. Years of experience : ……Years…….Months
7. Years of working in Critical care unit : …….Years …… Months.
8. Duration of duty hours per day: …… Hours
9. Family history of varicose veins : Yes / No
10. Doing Regular exercises : Yes / No

    If Yes, Specify a. Time duration ……...

    b. Type of exercise…….

11. a. Height: ……. b. Weight: …….
12. BMI :
13. History of varicose veins: Yes /No

    If Yes: a. Symptoms present …….

    b. Preventive Measures for varicose veins……

Section: B

Self administered questionnaire to assess the knowledge on prevention and management of varicose veins.

Questions related to

Part A: Knowledge on Varicose veins (Q. No 01 to 11)

Part B: Management of Varicose veins (Q. No 12 to 24)

Part C: Prevention of Varicose veins (Q. No 25 to 30)

Instruction for participants:

Read the above instruction carefully and answer the questions.

- Totally there are 30 questions and each question carries one mark.
- Each question consists of four options. The participants are requested to circle only one answer on the respective bracket. More than one answer is considered as invalid.
- The details will be kept confidentially.

Part A: Knowledge of factors related to Varicose Veins

1. **Varicose veins are referred as**
   a. Acute Arterial insufficiency
   b. Acute Venous insufficiency
   c. Chronic Arterial insufficiency
   d. Chronic Venous insufficiency
2. **The cause of varicose veins is**
   a. Injury in the intimal layer of veins
   b. Incompetent vein valves
   c. Occlusion by atherosclerotic plaque in the veins
   d. Vasospasm of the veins
3. **The common site of occurrence of varicose veins is**
   a. Femoral vein
   b. Popliteal vein
   c. Cephalic vein
   d. Greater and lesser saphenous vein
4. **Primary varicose veins are**
   a. Involved in deep veins only
   b. Involved in superficial veins only
   c. Involved in superficial and deep veins
   d. Involved in perforator veins only

5. The most common cause of varicose vein is

a. Vigorous exercises

b. Low fluid intake

c. Prolonged standing

d. Inadequate sleep

6. Associated risk factor of varicose veins in female is

a. Pregnancy

b. Short stature

c. Poor Nutrition

d. Heavy work

7. One of the following is not considered a symptom of varicose veins

a. Leg cramps

b. Itching

c. Feeling of heaviness

d. Cold legs or feet

8. The skin colour changes of varicose veins is called

a. Cutis marmorata

b. Hypopigmentation

c. Hyperpigmentation

d. Stasis Pigmentation

9. Varicose veins are commonly diagnosed by

a. Angiogram

b. MRI Scan

c. Duplex ultrasound

d. CT Scan

10. Telangiectasia is a

a.Ruptured vein

b.Spider vein

c.Compressed vein

d.Reticular vein

11. The potential complication of spider vein is

a. Rupture of spider vein

b. Paresthesia

c. Phlebitis

d. Swelling of limb

Part B: Management of varicose veins

12. The test commonly used to determine varicose veins is

a. Fegan's test

b. Trendelenbrug test

c. Perthe's test

d. Multiple tourniquet test

13. The action of diosmin used to treat varicose veins is

a. Vasoconstrictor

b. Analgesics

c. Vasodilator

d. Antibiotic

14. Compression stockings are used to

a. Reduces pain

b. Inhibits blood flow

c. Promotes venous return

d. Increase venous stasis

15. When should you wear compression stockings?

a. As soon as you get up in the morning

b. After your break fast

c. Before going to travel

d. Whenever you feel pain and discomfort

16. Ideal pressure of the compression stocking to manage varicose vein would be

a. 8 to 10 mmHg at the ankle

b. 10 to 20 mmHg at the ankle

c. 20 to 30 mmHg at the ankle

d. 30 to 40 mmHg at the ankle

17. The reasons an individual should not wear compression stocking is

a. Arterial occlusive disease

b. Healed Venous Ulcers

c. Lymphedema

d. Post thrombotic syndrome

18. Compression stockings to be removed to prevent complications once in

a. Every hour

b. Every fourth hours

c. Every eight hours

d. Every twelfth hours

19. How long to wear compression stockings for varicose veins?

a. Upto two years

b. Upto one month

c. Upto six months

d. Upto five years

20. Unna boot is comprised of

a. Vaseline impregnated bandage

b. Zinc oxide compressed bandage

c. Paraffin vax compressed bandage

d. Magnesium sulphate compressed bandage

21. Curative management for varicose veins are

a. Ligation & Stripping

b. Sclerotherapy

c. Laser Surgeries

d. Pheripheral vascular bypass surgery

22. An important measure after an varicose vein surgery is

a. Adequate fluid intake

b. Elevate the legs

c. Dressing

d. Not elevate the legs

23. Sclerotherapy involves

a. Cutting & anastamosis of vein
b. Injecting medicines into the vein
c. Harvesting the vein
d. Stenting of the vein

24. After sclerotherapy elastic bandage applied to maintain pressure for

a. 4 to 8 hours
b. 8 to 12 hours
c. 12 to 24 hours
d. 24 to 72 hours

Part C: Prevention of varicose veins

25. The leg elevation during sleep to prevent varicose veins is

a. 0 to 15 degree
b. 15 to 30 degree
c. 30 to 45 degree
d. 45 to 60 degree

26. Which is not considered for prevention of varicose veins is

a. Regular exercise
b. Leg elevation
c. Avoidance of prolonged standing
d. Wearing tight socks

27. The following action that cannot prevent varicose veins is

a. Adequate rest and sleep
b. Wearing compression stockings
c. Intermittent sitting and standing
d. Crossing legs while sitting

28. The activity to reduce pressure in lower limbs while working is

a. Do not Shift your weight from one leg to other
b. Rest your legs on a stool alternately
c. Take adequate fluid intake
d. Stand straight

29. Which exercises are used to prevent varicose veins

a. Leg exercises, calf raises and walking
b. Weight lifting
c. Deep squats
d. Running

30. Exercise helps in varicose veins to

a. Reduces muscle tone
b. Reduces pain and discomfort
c. Improve venous return
d. Improve venous stasis

ANNEXURE –V

AIM: To assess the knowledge of Nurses regarding prevention and management of varicose veins.

CENTRAL OBJECTIVE:

At the completion of the video assisted teaching programme the nurses will gain adequate knowledge regarding prevention and management of varicose veins.

SPECIFIC OBJECTIVES:

At the completion of the teaching the nurses will be able to

- define varicose veins
- list down the causes of varicose veins
- identify the risk factors of varicose veins
- explain the pathophysiology of varicose veins
- enlist the types of varicose veins
- discuss about the clinical manifestations of varicose veins
- describe the diagnostic evaluation of varicose veins
- define telangiectasia and its features.
- appreciate the management of varicose veins
- enumerate the complications of varicose veins
- discuss about the preventive measures of varicose veins
- demonstrate about exercises used to prevent varicose veins.

S. No	Specific objective	Content	Time	AV Aids	Teachers Activity	Nurses Activity	Evaluation
1		**INTRODUCTION:** Varicose vein commonly occurs in the general population. The physical conditions during the work and conditions of employment are important risk factors that induced prevalence varicose veins are increased.	2 mts	ppt	Introducing the topic	Listening	
2	The nurses will be able to define varicose veins	**DEFINITION:** Varicose veins can be defined as abnormally dilated tortuous superficial veins caused by incompetent valve closure which results in venous congestion and vein enlargement.	2 mts	video teaching	Defines and explains	Listening	What is tortuous?
3	The nurses will be able to list down the causes of varicose veins	**ETIOLOGY:** • Idiopathic • Prolonged standing or sitting • Congenital weakness of the vein structure • Female gender • Pregnancy • Obesity • Incompetent venous valves • Increasing age • Infections and trauma	3 mts	video teaching	Explaining	Listening and asking doubts	Why female genders get varicose veins?

4	The nurses will be able to identify the risk factors of varicose veins	**RISK FACTORS:** • Age • Female Gender • Family history • Obesity • Pregnancy • Prolonged Standing or sitting	2 mts	video teaching	Explaining	Listening	How pregnancy cause varicose veins
5	The nurses will be able to explain about the pathophysiology of varicose veins	**PATHOPHYSIOLOGY:** Due to the etiological factors ↓ Venous thrombosis ↓ Vein enlarges due to obstruction ↓ Valves become stretched and competent ↓ Reversal of venous blood flow ↓ Back pressure increases failure of calf muscle pumping ↓ Further venous distension ↓ Increased venous pressure is transmitted to the capillary bed ↓ The veins become edematous, tortuous and dilated.	5 mts	ppt cum video teaching	Explaining	Listening	What is thrombosis ?

6	The nurses will be able to enlist the types of varicose veins	**TYPES OF VARICOSE VEINS:** • Primary varicose veins • Esophageal varices • Secondary varicose veins • Hemorrhoids	2 mts	ppt	Explaining	Listening	What is varices?
7	The nurses will be able to discuss about the clinical manifestations of varicose veins	**CLINICAL MANIFESTATIONS:** • Enlarged veins • Painful, achy or heavy legs. • Throbbing or cramping in legs. • Itchy legs especially in the lower leg and ankle • Discoloration of skin (Hyper pigmentation) • Muscle cramps, muscle fatigue. • Ankle edema • Nocturnal cramps • Venous stasis	3 mts	video teaching	Explaining	Listening and asking doubts	Why itching occur in varicose veins?
8	The nurses will be able to describe the diagnostic evaluation of varicose veins	**DIAGNOSTIC STUDIES:** • History collection • Physical examination • Duplex Ultrasound Scan	2 mts	ppt	Explaining	Listening	How to do trendelenburg Test?

		➢ <u>Trendelenburg test I</u> • Ask the patient to lie down, • Empty the veins by elevating the limbs, • Apply pressure at the SFJ-Using a finger/ tourniquet, • Ask the patient to stand up, • Suddenly release the pressure. • Rapid filling from above indicates SFJ incompetence. ➢ <u>TrendelenbergTest 2</u> • Ask the patient to lie down, Empty the veins by elevating the limbs. • Apply pressure at the SFJ-Using a finger/tourniquet, ask the patient to standup, maintain the pressure for 1 minute. • Filling of veins from below indicates Perforator Incompetence.					

		➢ <u>Fegan's test</u> • In standing posture the places of excessive bulges within the varicosities are marked. • Make the patient lie down. Elevate the limb to empty the veins. • Palpate along the line of marked bulges to find out the pits/defects in the deep fascia which transmits the incompetent perforators. ➢ <u>Perthe's test</u> • Esmarch elastic bandage is applied from toes to the groin. This causes emptying of the vein. • Apply the tourniquet at the SFJ. • Remove the elastic bandage without removing the tourniquet. • Re apply the elastic bandage from above.					

		• At the positions of perforators visible varices / Blow outs are seen. The sites are marked. ➢ <u>Multiple tourniquet test</u> • To localize the approximate site of incompetent perforator. • Ask the patient to lie down Empty the veins by elevating the limbs • Apply 3 Tourniquets One below SFJ and Mid thigh One just above the Knee joint One just below the knee joint • Ask the patient to stand up. • Inspect for 30 sec • Take the tourniquet from below upwards • Veins dilate and fill up where the perforator is incompetent.					

9	The nurses will be able to define telangiectasia and its features.	**TELANGIECTASIA:** • It also known as spider veins or angioectasias, are small dilated blood vessels near the surface of the skin or mucous membranes, measuring between 0.5 and 1 millimeter in diameter. • The Causes are aging, heredity, oral birth control pills, hormonal changes during puberty or menopause, hormone replacement therapy, pregnancy, standing or sitting for long periods of time, wearing a girdle or clothing that is too tight, obesity and sun exposure etc. • The complications are ➢ Skin ulcers ➢ Bleeding ➢ Phlebitis ➢ Thrombosis	3 mts	ppt	Explaining	Listening	What is Phlebitis?

10	The nurses will be able to appreciate the management of varicose veins	**MANAGEMENT:** **Pharmacological Management:** • Diosmin (oral phlebotropic drug)) • Hesperidine found in citrus fruits (such as oranges, lemons) • Anti-inflammatory medication such as ibuprofen or aspirin for superficial thrombophlebitis • Analgesics **Conservative Management:** • Elevation of the legs. • Avoid prolonged sitting and standing. • Compression stockings. • Exercise • Lose weight • Unna boot	5 mts	ppt	Explaining	Listening	What is thrombophlebitis?

11	The nurses will be able to discuss about compression stockings.	**Compression Stockings:** • Compression stockings are made of a special elastic fabric. • They are very tight at the ankle and are less tight as the stocking moves up the leg. • This graduated tightness helps the leg muscles squeeze fluid up the leg, which improves blood flow from the leg back to the heart and decreases leg swelling and pain. • The most common recommended pressure is 30 to 40 mmHg pressure. • Put your stocking on first thing in the morning, before you are up on your feet. • Remove stockings at bedtime and every fourth hours to prevent complications. • Compression stockings should be worn for 2 years.	3 mts	ppt	Explaining and discussing	Listening and asking doubts	How long to wear compression stockings?

		• The contraindications of compression stockings are peripheral obstructive arterial disease, heart failure, septic phlebitis, oozing dermatitis and advanced peripheral neuropathy.					
12	The nurses will be able to discuss about the surgical management of varicose veins	**Surgical Management:** • Sclerotherapy • Vein Stripping and Ligation • Laser Treatment • Endovenous ablation therapy • Cryosurgery **Sclerotherapy:** Sodium tetradecyl sulphate 0.25 - 1ml at one site and maximum can be 4 ml at 4 different sites in superficial vein. **Vein Stripping and Ligation:** This procedure involves tying of all varicose veins associated with the leg's main superficial vein and removing it from the leg.	3 mts	ppt cum video teaching	Explaining	Listening	What is Vein stripping?

		Laser Treatment: This procedure uses no incisions or injections. Light energy from a laser is used to make the vein fade away. **Endovenous ablation therapy:** A tiny incision is made in the skin & small catheter is inserted into the vein. A device at the tip of the catheter heats up inside the vein, which causes it to close off. **Cryosurgery:** A cryo probe is passed down the long saphenous vein following sapheno femoral ligation. Then the probe is cooled with NO_2 or CO_2 to a temperature of -85^{o}. The vein freezes to the probe and can be retrograde stripped after 5 second of freezing. It is a variant of Stripping.					

13	The nurses will be able to enumerate the complications of varicose veins	**COMPLICATIONS:** • Eczema & Dermatitis • Lipodermatosclerosis • Haemorrhage • Thrombophlebitis • Venous Ulcer • Calcification • Periostitis • Marjolin's ulcer	2 mts	ppt	Explaining	Listening	What is Lipodermatosclerosis ?
14	The nurses will be able to discuss about the preventive measures of varicose veins.	**PREVENTION OF VARICOSE VEINS:** • Avoid prolonged standing. • Avoid wearing tight clothing such as girdles or belts. • Do not cross the legs when sitting. • Walking is good exercise. • Encourage her to maintain a normal body weight. • To elevate her legs periodically throughout the day. • Eat a healthy diet high in fiber	3mts	ppt	Explaining	Listening	How much leg elevation during sleep to prevent varicose veins ?

		and low in salt. • Avoid wearing high heels. • To elevate the legs 15 to 30 degree while sleeping.					
15	The nurses will be able to demonstrate about exercises used to prevent varicose veins.	**EXERCISES FOR VARICOSE VEINS:** • **Walking**- The single best exercise for your lower extremity circulation. • **Leg Lifts** – Sit on the floor or lie on your back with your feet straight out. Slowly, lift one leg at a time from the floor. Hold your leg in the air, letting the blood run down and back up your leg. Slowly, lower your leg back down to the floor. Repeat on the opposite leg. • **Calf Raises** – Stand with your legs straight. Slowly, rise on to your tiptoes and then lower back down.	5 mts	Video teaching	Explaining	Listening and re demonstrate the exercises	How exercise helps to reduce varicose veins?

		• **Bicycle Legs** – Lie on your back, bringing your legs in the air and bending them at the knee. Slowly, begin to pedal your legs as if you were riding a bicycle.					

CONCLUSION:

Till now we have discussed about varicose veins definition, causes, risk factors, types, pathophjysiology, clinical manifestations, diagnostic evaluation, pharmacological management, conservative management, surgical management, complications, preventive measures and exercises used to prevent varicose veins.

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ANNEXURE- VI

MASTER CODING SHEET

Demographic data												
S. No	Age	Sex	Professional Education	Marital status	Years of Experience	Duty Hrs	Family History of varicose veins	Doing Exercise	Ht	Wt	BMI	History Of varicose veins
1	24	M	BSC	UM	2.6	8	N	N	178	78	24.6	N
2	24	F	GNM	M	2	8	Y	Y	151	51	22.4	N
3	24	F	BSc	UM	1.6	8	N	N	162	53	20.02	N
4	25	F	BSC	M	4	8	Y	N	156	44	18.08	N
5	25	F	BSC	M	2.5	8	N	N	162	56	21.34	N
6	22	F	BSC	UM	2.6	8	N	N	156	49	20.1	N
7	24	F	BSC	UM	2.6	8	N	N	155	38	15.8	N
8	21	F	GNM	UM	1.6	8	N	N	153	58	24.8	N
9	28	F	BSC	M	6.3	8	N	N	162	65	24.8	N
10	28	M	GNM	M	5.6	8	N	N	156	52	21.4	N
11	25	M	BSC	UM	3.1	8	N	N	168	74	26.2	N
12	24	F	GNM	UM	3.6	8	N	N	158	40	16	N
13	26	M	BSC	UM	3.6	8	N	Y	180	78	24.1	N
14	25	F	BSC	UM	3.6	8	N	N	140	38	19.4	N
15	25	F	GNM	UM	2.6	8	Y	N	155	34	14.2	N
16	23	F	GNM	UM	2.7	8	N	N	150	38	16.9	N
17	25	F	BSC	UM	2.6	8	Y	Y	155	40	16.6	N
18	24	F	BSC	UM	2.1	8	N	N	154	40	16.9	N
19	24	F	BSC	UM	2.6	8	N	N	171	49	16.8	N
20	24	F	BSC	UM	2.3	8	N	N	154	58	24.5	N
21	25	M	BSC	UM	2.6	8	N	Y	178	78	24.6	N
22	23	F	BSC	UM	2.6	8	Y	N	160	58	22.7	N
23	24	F	GNM	UM	1.6	8	N	N	154	50	21.1	N
24	24	F	GNM	UM	2.6	8	N	N	152	55	23.8	N
25	23	F	BSC	UM	1.6	8	N	N	154	48	20.2	N
26	23	F	BSC	UM	1.6	8	Y	N	165	59	21.7	N
27	23	F	BSC	UM	2.6	8	N	Y	151	36	15.8	N
28	23	F	BSC	UM	1.3	8	N	N	151	48	21.1	N
29	23	F	GNM	UM	2.6	8	N	N	158	48	19.2	N
30	25	F	BSC	UM	3.3	8	N	N	163	45	16.9	N
31	23	F	GNM	UM	1.9	8	N	N	156	45	18.5	N
32	23	F	BSC	UM	1.3	8	N	N	153	49	20.9	N
33	22	F	BSC	UM	1.4	8	N	N	145	40	19	N
34	23	F	BSC	UM	2.3	8	N	N	152	43	18.6	N
35	23	F	BSC	UM	1.8	8	N	N	161	56	21.6	N
36	23	F	BSC	UM	1.3	8	N	N	156	48	19.7	N
37	22	F	BSC	UM	1.4	8	Y	N	163	45	16.9	N
38	21	F	BSC	UM	0.5	8	N	N	158	51	20.4	N
39	22	F	BSC	UM	1.6	8	Y	N	159	48	19	N
40	22	F	BSC	UM	0.4	8	N	N	151	49	21.5	N
41	23	F	GNM	UM	1.6	8	N	N	153	50	21.4	N
42	22	F	BSC	UM	0.4	8	N	N	157	44	17.9	N
43	24	M	GNM	UM	2.6	8	N	N	181	50	15.3	N
44	26	F	GNM	UM	3.1	8	N	N	156	56	23	N
45	24	F	BSC	UM	1.6	8	Y	N	155	45	18.7	N
46	24	F	BSC	UM	3.6	8	N	N	150	51	22.7	N
47	25	M	BSC	UM	2.6	8	N	Y	176	80	25.8	N
48	27	M	BSC	UM	3.6	8	N	Y	172	80	27	N
49	24	F	BSC	M	2	8	N	Y	150	51	22.7	Y
50	23	F	BSC	UM	1.3	8	Y	N	155	60	25	Y

Pre Test Knowledge Score					Post Test Knowledge Score				
S.NO	K	M	P	TOTAL	S.NO	K	M	P	TOTAL
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Item Wise Analysis PreTest Score																															
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50	0	0	0	1	1	1	0	0	1	1	0	1	1	1	0	0	0	1	0	0	0	1	1	1	0	1	1	0	1	0
	42	24	7	20	45	43	19	23	45	41	17	17	21	43	37	27	25	22	8	27	15	41	35	11	8	15	39	16	47	2

Item Wise Analysis Post Test Score																														
S.NO/ Q.NO	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
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10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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50	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
	50	43	47	45	50	48	46	47	48	50	42	**44**	**39**	**47**	**45**	**43**	**45**	**48**	**42**	**44**	**47**	**45**	**46**	**41**	**43**	**42**	**46**	**44**	**49**	**40**

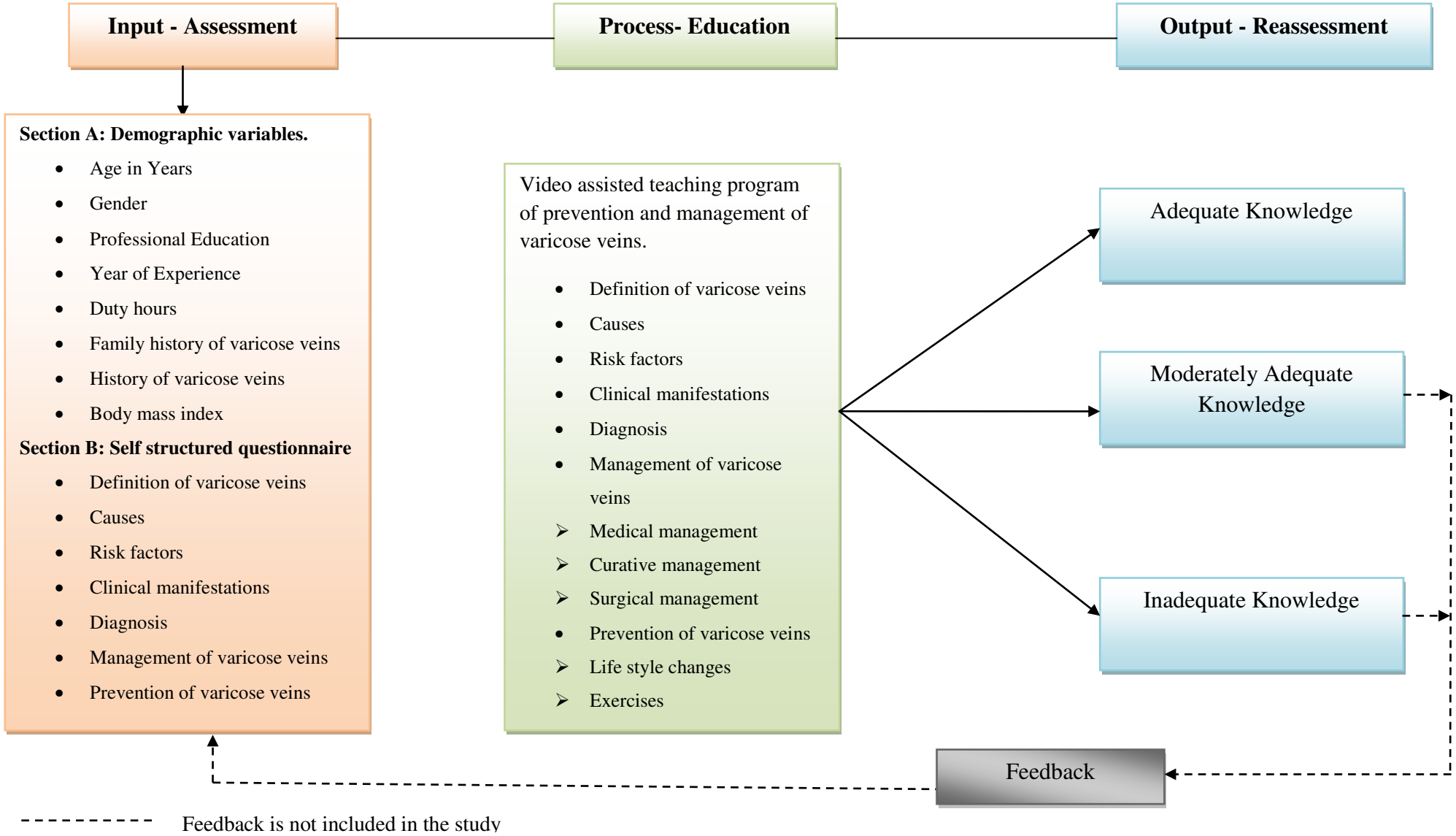

Figure No. 1.1: Based on Ludwig Von Bertalanffy (1968) modified general system model to assess the effectiveness of video assisted teaching program for nurses on prevention and management of varicose veins.